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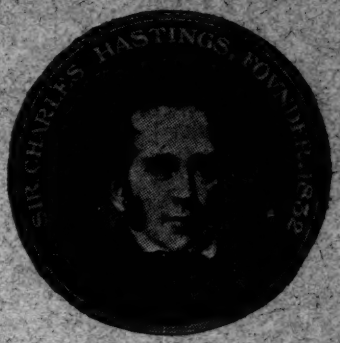

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"There can be nothing more sure in physiology than this: that as we go upwards in the scale of creation, so the nervous system becomes more highly strung. But if, on the one hand, it becomes more intense in the enjoyment of pleasure, it must also, on the other hand, be more sensitive to pain and to disturbing sensations of all sorts."

Thus wrote the late Sir James Goodhart so long ago as 1891, and the truth of his statement becomes more firmly established in clinical experience as time goes on. As habits of life become gradually altered, so of necessity do the disorders which interfere with the regular fulfilment of these habits slowly assume new features and fresh significance. Of all the tissues of the human body there are none so sensitive to the influence of changing conditions as those that go to the make-up of the nervous system. Hence it is that we are confronted with an apparent increase of nerve disturbances and diseases out of proportion to those associated with other organs or systems. But, while this is true of disorders that have earned a title to a name because by ascertainable signs and symptoms they have acquired an individuality by which they can be recognized, the same cannot be said of the functional departures from normal stability. These confront us at every turn and are bewildering in the multiplicity of their manifestations and often also in the perversity with which they mimic true disease dependent upon actual tissue change. How far functional disturbance is a harbinger of organic mischief is a question at present impossible to answer, but in the case, for instance, of such a disorder as disseminated sclerosis there is reason to suspect that an inherited poor quality of nervous structure may pass through the trials of functional poverty and end in the bankruptcy of established disease.

The term "neurosis" is now used as descriptive of nerve disturbance for which no corresponding pathological changes in the nervous system can be found. Many neurotic conditions are essentially of central origin, and are concerned with every variety of subjective sensation. They are more common in women than in men, and are liable to declare themselves under the influence of grief, excitement, anger, jealousy, and other passions by which emotional centres are aroused to unwonted, and often uncontrolled, activity. The storm soon blows itself out, but it leaves behind a wreckage of shattered nerves, which with each succeeding ebullition find increasing difficulty in settling down to a well-balanced placidity.

The central neuroses, infinite in number and variety, do not fall within the compass of this communication, which is intended to deal only with those that manifest themselves, in all their most prominent symptoms, through one or other of the great organic systems. If we turn our attention, in the first place, to the cerebro-spinal system, we have no difficulty in finding examples which, to distinguish them from those that are properly regarded as central or mental, may be conveniently differentiated as neuroses of peripheral type. How many of the headaches, for instance, with which we are called upon to deal, are simple neurosal manifestations!—the occipital discomfort that, coming after an unusually arduous day, cries out for rest to a wearied head against a high-backed arm-chair with a roll-cushion collar, and creates an earnest desire for an early retirement to bed because of the sure knowledge that a good night's rest will chase all the aching headache away; or the piercing distress of the unilateral pain that after some unusual worry or excitement suddenly conveys a feeling as of a spike being driven into the temple; or even the ordinary migraine, presaged on first waking in the morning by premonitory warnings which come to be recognized as the unfailing intimation of a hemicranial headache that before middle day will have made work impossible and compelled a retirement to bed in a darkened room where active sickness and subsequent sleep are prayed for as the blissful termination of a wretchedness that finds relief through no other channel. Are not all these headaches varieties of neurosal disturbance which circumstance directs along one channel or other according to the idiosyncratic or inherited tendencies of the individual? Rest is the one essential to their cure, and a toxaemic invasion of tired-out and unstable centres the most probable explanation of their incidence. But in a certain proportion of cases this much-needed rest eventually fails to come to the rescue. The martyr to one or other form of functional headache has treated his disorder with scant courtesy. He feels so well between whiles that his headache becomes forgotten in the rush of life until a successor arrives to remind him that his physiological sins must again pay the penalty. He becomes subject to noises in the ears, and uncomfortable sensations of giddiness; to waves of heat and cold; to numbness, "pins and needles" and various other paraesthesias; and, finally, to insomnia, all of which are merely so many additional neuroses—finger-posts on the road to the terminal goal of a generalized tiredness and inertia pathognomonic of the condition which we nowadays call neurasthenia.

If, again, we consider the spine as a centre for highly strung manifestations, how many varieties of backache bear close resemblance to headache! The difference is merely one of distribution, and putting on one side the great group of diseases which result from organic change either in the cord itself or in the structures of the spinal canal which contains it, a whole volume might be written on the vagaries of functional disturbance which group themselves round the spine as their seat of origin. The essential symptom is pain, referred to one or more of the spinal vertebrae, most frequently in the lower dorsal or lumbar regions, which is always aggravated by movement or pressure. Tenderness, it will be remembered, is never a prominent symptom in cases of myelitis or other organic lesions of the spinal cord. This backache, like the functional headache, has no organic explanation; it comes to those who are run down from anxiety or overwork, and mostly is associated with a hereditary predisposition to nervous disorders. The complaint is almost to be recognized by the dejected appearance, shuffling gait, rigid attitude, and deliberate movements of the patient when he enters the room. There is a long recital of broken health, impaired appetite, disturbed sleep, and malaise, with, generally as a terminal event, some unimportant injury to the back caused either by a casual blow, a slight fall, or an accidental twist. From that moment the spine becomes painful, and when it is examined one or two vertebral processes somewhere below the middle of the column are found to be exquisitely tender to touch. There is no interference with the competency of the sphincters, and there are no disturbances of common sensation. The deep reflexes are exaggerated, but none of the usual symptoms of organic cord lesion are present. The patient is only comfortable in bed, and his persistent sense of tiredness almost reconciles him to the additional misery of backache because it provides an excuse for a temporary withdrawal from every attempt at effort. It is a remarkable feature of this form of neurosis that when it occurs in a man it is very frequently accompanied by a profound conviction that it is somehow connected with a failure of power or a fault somewhere in his sexual mechanism. The act of coitus or the occurrence of a nocturnal seminal emission induces an alarming sense of prostration, and at once brings about a disturbing increase of his spinal tenderness. Unfortunately it is just in persons of this unstable type that the sexual centres are most readily activated, and a physiological process comes to be regarded as a pathological fact whose early termination will surely be a complete loss of virility. It is to this unlucky type of man that all the pernicious literature of the quack appeals. Long before the pain in his back has become so acute as to lay him up, he has indulged in one variety of secret remedy after another in a vain endeavour to "preserve his manhood." Whatever that may mean, it adorns the pamphlets of every rogue who knows how to make money by an appeal to the groundless fears of this class of neurasthenic.

In women functional spinal tenderness is most apt to locate itself either over the prominent seventh cervical vertebra, or at the other end of the spine over the coccyx. In either situation severe pain may be caused by inflammatory changes, but where no such explanation of the suffering exists the solution is to be found in a highly strung nervous system with, for some reason or other, a localized incidence of subjective pain in one or other of

these situations. The match to the gunpowder is often provided by a slight and wholly inadequate traumatism, but as often as not the closest inquiry fails to elicit any sufficient exciting cause.

Intercostal neuralgia is another example of spinal distress. The frequency of its occurrence in women in the fourth or fifth left intercostal space is one of the problems of functional disturbance which no one yet has been able to explain. We are all familiar with it as a clinical fact which creates in the mind of many a sufferer the fear of heart disease, cancer of the breast, or pleurisy.

The spinal manifestations which sometimes follow on the shock of a serious accident have come to be recognized as a disease-entity under the name of "railway spine," but the fact that the same train of symptoms may result equally from a profound mental impression as from a physical shock or concussion, suffices to prove that in certain persons the functional balance of the nervous system can be seriously deranged by a wide variety of exciting causes. Most cases ultimately recover completely, but where litigation is pending as a result of an accident, the symptoms tend to increase rather than diminish. A settlement of claim often starts the patient on the road to complete and perfect recovery.

In the circulatory system we find another large variety of manifestations dependent upon a highly strung nervous system. To tell a neurasthenic patient that he has a "weak heart," as is not infrequently done, means supplying him with a peg on which to hang all his miseries, and one which it does not take much to convince him is insecurely fixed and liable at any moment to "peg out." It may confidently be asserted that, except as part of a general debility, there is no such thing as a "weak heart." The subjective consciousness of the heart's action is, in the large majority of cases, no evidence of heart disease, and, more often than not, means nothing worse than a disturbed digestion. Irregularity or rapidity of rhythm, a feeble first sound, a small and soft pulse, are among the indefinite and untrustworthy phenomena upon which this pernicious diagnosis of "weak heart" is founded. In the absence of physical evidence of disease at the valvular orifices or of changes in the walls of the heart itself, such a diagnosis is vague and worthless to those who know, but precise enough to be alarming to those concerning whom it is pronounced.

The significance of the feelings of faintness experienced by those who suffer from so-called "weak heart" is another of the problems which may be readily misunderstood. They occur mostly in feeble women, and the usual story is that the person experiences sensations which make her believe she is about to faint but that she never actually loses consciousness. She feels cold all over and looks pale, but immediately after flushes, has palpitations, and breaks out in a perspiration. Apart from the possibility of such attacks being epileptic in character (and such an interpretation must never be lost sight of), it is safe to assert that faint feelings of this description originate in some form of reflex disturbance in the vasomotor nerve centres, and are not a result of any radical fault either in the heart or circulatory system.

True syncope is met with in cases where there is dilatation of the heart, or valvular disease, or myocardial degenerative changes, but in each of these instances, if search be made, ample evidence will be found in physical signs to guide the diagnosis aright; the condition, moreover, is generally one of actual fainting with temporary loss of consciousness, and not one of mere faint feeling with all its apprehensive accompaniments.

In this connexion there is a long string of neuro-vascular manifestations which are in close relationship: Chilblains, dead fingers, cold feet, urticaria, erythromelalgia, acroparaesthesia, angio-neurotic oedema, imperfectly developed types of Raynaud's disease, or of Graves's disease, and the perplexing symptomatological vagaries of the menopause. All these conditions are met with in people who, either by inheritance or acquisition, are possessed of highly strung nervous systems, however much they may differ in temperamental type. Most of them begin and end as examples of functional disturbance, but experience would seem to suggest that, in some, the perversion of function proves the prelude to determinate organic lesions. This would seem to be exemplified in cases in which intermittent arterial spasm or claudication may be accepted as a reasonable explanation of the symptoms presented. Urticaria, erythromelalgia, and Raynaud's disease, are familiar instances to which such an explanation may be applicable. But there are others—migraine, epilepsy, asthma, and angina pectoris, being among the most notable—in which, where there is no obvious organic change to account for them, it may be legitimate to regard arterial spasm as a possible contributory element. Arterial claudication is known to be responsible for a variety of cramp in the muscles of the legs which may be so severe as to make ordinary walking temporarily impossible, but it is not so fully recognized that apparently the same cause affecting the central vessels may be responsible for a train of symptoms closely analogous to those associated with thrombosis, embolism, or haemorrhage. This was illustrated in the following case:

A lady of 64 years of age, who had over a period of many years been the subject of successive illnesses, all conditional upon a highly strung nervous system, had recently become liable to unaccountable and distressing attacks of vertigo. She was of the neurasthenic type, but the only forthcoming evidences of structural change were found in the vascular system. The arteries were moderately thickened and tortuous, the second aortic sound was distinctly accentuated, and the urine contained a faint haze of albumin. Suddenly one morning, on rising from bed, she experienced a more than usually severe attack of giddiness, which was immediately followed by inability to speak, partial paralysis of her face, some loss of power in one arm, and numbness, with tingling, in the corresponding leg. The speech defect developed into distinct aphasia which lasted over two days and then entirely disappeared. As the speech returned to normal, both arm and leg regained their usual power and comfort. The same sequence of events was repeated in many subsequent attacks of a precisely similar nature, and it came to be recognized that they usually occurred either after a fit of bad temper, to which she was prone, or after an unwise and over-abundant meal in which she loved to indulge. She was a full blooded, gouty type of woman whom Nature had unkindly endowed with a prodigious appetite and a digestion that could always rise to the occasion. Under a more carefully restricted diet and a better regulated life her health improved, and she had no occurrence of her hemiplegic threatenings.

In such a case as this there would seem to be no more likely explanation of the symptoms than faulty nerve control, causing a spasm of the cerebral vessels analogous to the condition that is regarded as responsible for claudication in the vessels of the lower extremities.

In the respiratory system it is again easy to find examples of disturbance which can be reasonably explained by the hypothesis of a highly strung nervous system. In the overwrought anaemic woman who seeks advice from time to time on account of aphonia the complete loss of voice usually comes on suddenly and causes serious alarm. It may continue over a period of weeks or months, but more frequently it disappears as suddenly as it came and leaves the patient none the worse. Hiccough is a minor ailment, due to spasmodic contraction of the diaphragm, which sometimes proves very rebellious to treatment. It usually comes in paroxysms of longer or shorter duration according to the severity of the exciting cause. In hysterical or neurotic patients it is not a symptom of serious gravity, however long it may continue, nor is it of any consequence when it arises from highly spiced or unduly hot food, but it is often indicative of serious possibilities when met with in advanced conditions of abdominal disease or in the later stages of gout, diabetes, or Bright's disease. Paroxysmal sneezing is another example of nerve-storm affecting the upper air passages. Apart from patients in whom some actual lesion in the naso-pharynx is found to account for the recurrent irritation, cases occur with considerable frequency in which more or less severe attacks of sneezing occur from time to time for no apparent reason. They are often associated with a gouty state. Hay fever is closely allied to this condition, from which it only differs in being more persistent, characterized by difficulty in breathing rather than by persistent sneezing, and associated with states of atmosphere abnormally charged with the pollen of grasses or fine dust of one kind or another. It is a near friend to paroxysmal asthma, which, though sometimes induced by one of several organic causes, is in many instances a true product of a highly strung nervous system.

In addition to these classified types of what may be regarded as respiratory neuroses, there is yet another, not so common, but exceedingly interesting on account of the diagnostic doubts and difficulties which its occurrence raises—namely, simple rapidity of the respiratory act. It

is, like the others, a paroxysmal affection which comes and goes without apparent cause and leaves the respiratory movements between whiles quite normal. There is no true dyspnoea and no symptoms referable to the upper air passages. Any difficulty there may be is concerned with the inspiratory part of the respiration cycle, and even this may not exist as a subjective experience. The breathing is rapid and shallow, often reaching 30 or 40 a minute, and the knowledge of it causes the patient much emotional disturbance and makes him afraid to move about lest he loses his wind altogether. Here is a typical example:

A gentleman, aged 55, who had always suffered, in one way or another, from "nerves," though with perfectly healthy organs, became very much upset on the outbreak of this war with all sorts of fears and fancies. He was convinced the cause of the Allies would not prove victorious, and he magnified every adverse rumour or temporary reverse into certain evidence of the rapid fulfilment of his pessimistic prophecies. In the Zeppelin raids he saw further evidence of the approaching failure of Britain's cause. He lived in constant dread that sooner or later he would be burned out of house and home, or killed by a bomb. Though in a less degree, the financial possibilities of the war possessed his mind, drove him to all sorts of petty and ineffective economies, and at times made him dread the default of all his dividends. Despite this mental state, his general health remained steadfast. His appetite was excellent, his digestion good, and his bowels regular. Though at times very restless, he lost no weight. Two important physical facts, however, became established: he was unable to sleep at night without the help of bromides or medinal, and he developed a most surprising irritability of the respiratory nerve centres. Immediately after any excitement, whether mental or physical, and sometimes without any ascertainable exciting cause, his breathing became laboured and accelerated. Every accessory muscle was brought into play, and, though each respiratory act was short and a great fuss was made over its accomplishment, there was no cyanosis and no cough. He kept restlessly moving about all the time it continued and the pulse did not vary from its normal rate of 68–72. Each attack subsided as speedily as it began, and in the intervals the respiration was quiet and at the normal (18). It seldom troubled him while at meals and entirely disappeared during sleep.

Passing now to the abdominal cavity we come to a region in which the highly strung nervous system plays more frequent and obscure pranks than in any other. The whole length of the gastro-intestinal tract constitutes an immense field, every inch of which is influenced and controlled by the nerve supplies of the great sympathetic as well as of the cerebro-spinal systems. It is from this region more than any other that toxaemic conditions mostly emanate, and when we consider the important functions of digestion, assimilation, and elimination with which it is concerned, the marvel is that, apart from disease, the wonderful adaptability of its intricate nervous mechanism provides for such a beneficent maintenance of balance that, in perfect health, its physiological problems are solved for us every hour of the day without any subjective knowledge of the ceaseless chemical, biological, and physical processes by which we are kept alive and well. There is no local departure from the normal that does not involve the nervous supply by which the whole is regulated, and, in many instances, it is open to question whether some of the more common disturbances which we recognize by name—constipation, diarrhoea, indigestion, gastric catarrh, colitis, for example—should not be, with greater accuracy, grouped under the heading of diseases of the nervous system. Admittedly the fault, whatever it be, originates somewhere in the alimentary tract, but it only obtrudes itself on our attention by symptoms that ensue in consequence of sequential disturbance of its innervation. What, for instance, does constipation or diarrhoea convey to the minds of most of us? Not a disease entity at all, but a mere disturbance, in one direction or the other, of a normal function, brought about in large measure by a faulty supply of the driving power. Closely allied to both of these conditions, and sometimes associated with one or other, is vomiting. This occurs as an accompaniment of many disorders both of the stomach and of the general health. But there is a well-recognized form of active and sustained vomiting which has no apparent dependence upon any departure from health, local or general, and which by common consent we recognize as hysterical, functional, or neurotic, according as we choose the qualifying adjective that most correctly expresses our view of its etiology. There is no organic fault to account for it, and it often disappears suddenly and completely, even after long duration.

Then, again, how much of every variety of dyspepsia is dependent upon interference with the normal rhythmic current of nerve supply! In one variety of dyspepsia to which I have recently referred in this Journal the primary cause is undoubtedly fatigue of the nervous centres with a consequent dyspepsia of which the leading characteristics so closely resemble the symptoms we associate with duodenal ulcer as to make the differential diagnosis, at least in the early stages, a matter of no small difficulty. It may in this connexion be surmised that the ileal and duodenal kinks, the sagging transverse colon, and all the other physical evidences of atony that go to make up the general picture of intestinal stasis, of which we hear so much at the present time, are dependent, in their earlier beginnings, on imperfections in the nerve supply. It is at any rate a significant fact that, in the majority of such cases, the patient presents other symptoms that unmistakably declare the existence of neurasthenic tendencies.

Mucous colitis is yet another intestinal derangement which seems to be more truly symptomatic of a leakage of nerve energy than of any established change in the colon itself. The pallor of the stools frequently associated with mucous colitis is probably neither more nor less than a neurosis manifesting itself incidentally through the bile ducts. No organ in the body is so universally blamed for health upset of one kind and another as the liver, and apart from the lesions caused by organic disease, by various blood dyscrasias, or by the toxaemic consequences of over-indulgence in food and drink, there remains a group of cases in which the exciting cause is best explained by faulty nerve supply. We gain some corroboration of such a theory from the fact that sudden shock may have as one of its immediate consequences an attack of jaundice, and every now and again we meet with cases in which recurrent attacks of mild icterus are obviously the expression of a hepatic nerve storm.

Our knowledge of pancreatic disorders is still limited, and the exact part which the pancreas plays in diabetes—the disease with which it is most commonly associated—is still a question round which there surges a wide variety of opinion. One of the latest theories suggests a depraved nervous spleen as the starting point from which, in the majority of cases, the changes in the inter-relationship of its secretions pave the way for an ultimate failure in carbohydrate metabolism. We cannot forget that glycosuria has been produced in animals by puncture of the floor of the fourth ventricle, nor can we lightly set aside the fact that it occurs in its greatest incidence after middle life, not only in those who are gouty or who have lived too well, but also with conspicuous frequency in men of intellectual type who have been brain-workers and have borne the burden of the day under conditions of more than average demand on their nervous energies. Experience, moreover, is declaring with more and more certainty that alimentary restrictions on the old lines of severity are no longer desirable or necessary, and that most cases do best when the diet is allowed to include as large an amount of carbohydrate as the toleration of the individual will permit. Further, it is clearly proved that the capacity for assimilating carbohydrates without seriously increasing the glycosuria is almost mathematically commensurate with the amount of leisure in life that can be enjoyed. The mere existence of a moderate amount of sugar in the urine after middle life is of little consequence if the nutrition otherwise is maintained. It is not in itself a disease, any more than the presence of urates; both are evidences of a disturbed metabolism, and nothing more; but the former is more indicative of a neurosal ancestry whose influence tends to accentuate and perpetuate an established hyperglycaemia unless care as to food is combined with a decisive curtailment of wear and tear.

The kidneys, and the urinary tract generally, offer endless opportunities for manifestations of the highly strung nervous system. The polyuria of mental anticipation, the incontinence of fear, the precipitancy of anxiety, are all everyday instances of disturbed nerve control. Is not the condition we recognize as diabetes insipidus merely an accentuated phase of simple polyuria? It almost seems to form a link between it and glycosuria, a link with very special etiological significance for those who perceive in all degrees of glycosuric disturbance a nervous element of weighty importance. Many cases presenting all the

symptoms of calculus either in the kidney or ureter surprise us by the negative results obtained from an *x*-ray examination. The disturbance of innervation may cause what is most easily explained on the theory of ureteric spasm, but whatever the mechanism be, it is pretty certain that the symptoms produced by a renal calculus can be very faithfully mimicked by a disturbance of nerve function.

In people who are neurasthenic and thin, and particularly in women who are of this type, the right kidney is apt to become more or less loose. Whenever such a woman has the misfortune to fall into the hands of some one who, having discovered it, solemnly pronounces a verdict of floating kidney, she is at once launched on a sea of countless troubles, and frequently, having sought relief from one form of treatment after another, at last ends in a nursing home, where she is promised a permanent cure by having her wandering kidney firmly stitched to her side. Though such operations are in some instances desirable and successful, in the majority the subsequent relief is small, and in not a few the net result, so far as the nervous system is concerned, is to make bad decidedly worse. The one event in such cases which ought to remove all opposition to operative treatment is the occurrence or threatening of a hydro-nephrosis.

The evidences of a highly strung nervous system furnished by the uterus and ovaries are too numerous to admit of discussion here. They are responsible for much personal misery and domestic discord. The frequency with which elaborate local treatment of one kind and another has become fashionable raises doubts in the minds of many as to its wisdom—even as to its justification. The removal of an ovary, often for a problematical reason; uterine douchings and curettings; vaginal packings; and all the rest of it, may succeed in relieving the local "congestion" which is supposed to be responsible for the dragging pains, the excessive menstruation, and the failure to conceive. But what about the effect upon the nervous steadiness and general tone of the patient? The question in this wider aspect is probably not always seriously enough considered, but if greater attention were given sufficiently early to the maintenance of the central nervous system in a condition of robust and self-reliant integrity, and to the regulation of daily habits of life on lines of greater simplicity and homely regularity, the need for most of such treatment would vanish, and it would be found again, as in the days of our grandmothers, that the pelvic organs, in the absence of actual organic disease, might with advantage be left in most cases to look after themselves.

PRACTICAL HINTS ON FUNCTIONAL DISORDERS.

BY

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EIGHTEEN months' service has convinced me that much harm is done by failure to recognize psychical disabilities which, though sometimes so extraordinary as to deceive the most wary, should generally be diagnosed by any one who is awake to their possibilities.

Tests of sensation should be applied where there are not enough signs fully to account for all disability present. I have formed the habit of testing every case I see and have thereby often arrived at an unsuspected diagnosis.

Such a test is that for hysterical anaesthesia: every man with a weak or paralysed limb should be tested with light pin-prick. If there is numbness or the prick is not felt as a painful sensation, the area of anaesthesia should, if organic lesion be present, follow the anatomical distribution of a nerve or nerves; if the anaesthesia ends at one level, like a sleeve or stocking, it is almost certainly hysterical. To confirm this, the upper limit should be marked with a pen; then the observer starts again at the periphery of the limb and works upwards in a zigzag; this time the limit will probably have shifted downwards for an inch or two and repeated tests will bring it still lower. Moreover, tests with pin, cotton-wool, and pressure will, especially if the patient is allowed to watch them, all show anaesthesia ending at the same level; this never occurs in nerve lesions, and with the zigzag test should serve to eliminate those rare cases in which—so neurologists tell me—a root lesion of the brachial plexus gives an anaesthesia of the sleeve type. The patchy alterations in spinal cord disease should not cause doubt, though one meets hysterical anaesthesia of a proximal part of a limb—for example, from the elbow to the shoulder.

The principle of the zigzag test should be understood; localization of a peripheral stimulus is not perfect, and by the zigzag approach the patient is led to feel that a greater distance in a straight line has been covered, hence he thinks the original spot has been reached when the pin is perhaps two inches or more distal to it.

If the altered sensation depends upon a genuine lesion, the sense of localization is not called into use and therefore cannot be deceived; but one must remember that with a true slight alteration of sensibility the answers of a patient may not always be consistent. With a complete loss of sensation in a peripheral nerve the boundary, if the patient is intelligent, is constant.

If a total loss of sensation is claimed the Yes–No test is available. The patient is made to look at the ceiling and answer quickly, saying "Yes" when he feels a touch, and "No" when he does not. When touched on the anaesthetic area he may say "No," thus demonstrating that he really does feel; a smart man will say "No" once or twice only, or may shape his lips for the word and then arrest it when he realizes the trap, but one of duller understanding will answer "No" at repeated examinations without seeing his foolishness.

Hemianaesthesia of the body and limbs is frequent; a patient treated for rheumatism of the left arm and leg, with a trip to Droitwich thrown in, had hemianaesthesia involving the tongue and palate, with concentric diminution of the visual fields. For eight months the treatment had been carried on, whereas a pin would have settled the diagnosis in so many seconds. Similarly a patient with chorea of two months' standing, and regarded as seriously ill, with one side paralysed, fell to the Yes–No trap, and after a strong suggestion was able to get up and make his own bed.

Unless there is some special reason to the contrary, pain produced by pressure is not accompanied by hyperaesthesia of the skin over the same area. Thus a gonorrhoeal knee, a tuberculous elbow, or a joint inflamed by rheumatic fever may be exquisitely tender to pressure with the finger, but to light pin-prick it may be even slightly anaesthetic owing to subcutaneous effusion. Exceptions to this occur in appendicitis and other abdominal conditions, where areas of referred pain coincide with those of deep tenderness; in basal pneumonia with referred pain in the abdomen; in dental conditions, where the jaw is tender and superficial hyperaesthesia is felt along the fifth nerve; in scars involving a nerve; and probably in many conditions which I know not, but which should always be capable of explanation in anatomical terms. Therefore a sprain of the back, where pressure with the thumb and light pin-prick cause pain over the same area, may be regarded as psychical. A "rheumatism" in the calf with pin-prick pain needs explanation, and a sprained ankle which reacts similarly should be exercised at once.

The zigzag test may be applied to these conditions, especially "sprained backs," where the limit may be shifted by as much as six inches.

A fallacy must be guarded against; the man with a painful joint will expect a pin-prick to be painful, and his apprehension must not mislead. The existence of deep pain and superficial pain over different areas may be diagnostic of true disease.

A man who claimed to have hurt his neck was suspected of malingering. His neck was rigid, and he declared that movement was difficult and painful; there was pain to pressure in the side of the neck, with no superficial tenderness; the distribution of the great occipital nerve was mapped out by pin-prick hyperaesthesia, though pressure on that area was painless. Such a combination would never be imagined by the lay mind; in fact, the man was surprised when his symptoms were demonstrated: a diagnosis of a fractured articular process was made.

To differentiate between conscious and unconscious simulation is necessary but often difficult; sometimes the hysteric is a good fellow who deserves more sympathy than is consistent with cure; sometimes he resists all treatment and may openly say that he has no wish to be well, but, as

Sir John Collie points out, it is hard to distinguish between "Not able to be willing" and "Not willing to be able."

"Paralysis," "paresis," "neuritis," "nerve concussion," are terms which often hide the truth. The last was introduced by Sir George Makins to describe a definite lesion of a peripheral nerve, generally caused by a rifle bullet; I have heard it misused often—for example, in neurosis of the leg with stocking anaesthesia, following a kick on the shin.

It is in connexion with wounds that what may be called surgical hysterias most often occur, and are most often overlooked. There are present nervous strain, maybe a suppressed emotion (of fear?), a wound, and then well-deserved but ill-directed and harmful sympathy. If we add to this a false diagnosis of organic disease, even the best and bravest may develop a hysterical condition. It is striking to meet a patient who presents the classical signs of such a state, whose illness has dragged on for months, and who recovers before one's eyes when he is told the truth. Such cases are rare; intelligence, desire for cure, and a belief in the surgeon are requisite. Here is an example:

An officer was wounded in the right arm; the musculo-spiral nerve was sutured, and he was treated by massage and electricity for seven months (for this I was partly responsible). His hand and forearm were then as if carved from wood, without movement, and anaesthetic. He was to appear before a medical board in a fortnight, and feared being invalided out of the service. His condition was at last recognized, a straight talk followed, and the board passed him as fit for general service, even his musculo-spiral nerve being found to function perfectly. The faithful carrying out of massage and electrical treatment had helped to keep his muscles in order, but I believe such treatment may be harmful if not accompanied by mental therapeutics. One sees cases like this where treatment has only confirmed an obsession.

A psychical is often added to an organic disability.

A man received a wound involving the metatarsal bones, and after five months he walked on crutches with the knee flexed and the foot dropped. There was contraction of the calf muscles, causing equinus deformity, and the anterior tibial group was apparently paralysed. When the faradic current showed the patient that his extensor muscles could contract, he was soon persuaded to use the foot and discard his crutches, but a true lameness persisted, due to the metatarsal injury.

In another case a hysterically "wooden" hand and forearm recovered under mental treatment till a median paralysis revealed itself; an electrical examination would have shown the hidden lesion.

1. *Talipes Varus.*—Among types which occur with sufficient frequency to be worth special mention is talipes varus.

One man appeared before a medical board using crutches and wearing an elaborate and expensive orthopaedic apparatus on his right leg. His papers gave a diagnosis of "talipes varus following osteo-arthritis," and he was recommended for discharge as permanently unfit. He had been in hospital three months. His foot was in a position of extreme varus and hyperaesthetic to half-way up the calf. His crutches and instrument were taken away and strong suggestion was applied. Cure was difficult owing to the fixity of his obsession and the previous treatment, but he was sent out in two months with a plantigrade foot and walking perfectly.

A similar case was treated by tenotomies with a bad result.

A third case opposed all treatment and was invalided out with a correct diagnosis, of which his friends were informed. He was cured somehow, perhaps helped by the absence of a pension and of family sympathy, and re-enlisted.

2. *Tilted Pelvis with Scoliosis and Apparent Shortening of a Leg.*—This deformity can be produced at will.

One man who had worn a surgical boot for a year and been regarded as permanently disabled was cured by five minutes' talk.

Another case was reported, with illustrations, in a daily paper as the marvellous cure of a short leg by a German method of crawling exercises. The man was shown triumphantly holding up his boot, but still wearing a surgical jacket for his scoliosis. His cure seemed to be a fortunate accident.

To this group will be added some of those men in blue one sees near convalescent homes, walking with a stick and swaying the body at every step.

3. *Paraplegia after Shell-shock.*—This may occur in a genuine form, but the following presents little room for doubt:

The patient had been invalided for a year; he now walks bowed and with two sticks; puts his weight on his toes; the feet are swollen from disuse. No other physical signs, but plantar reflexes and knee-jerks are feeble; other reflexes normal. Anaesthesia of Yes-No type up to the groins.

4. *Frostbite.*—Although the possibility of organic anaesthesia of stocking type must be admitted on account of the nature of the trauma, yet the writer believes that this case is typical of many and is truly hysterical:

Frostbite contracted in 1914. On examination in June, 1916, the toes were kept dorsiflexed, though they could be bent down against the resistance of the muscles. The feet were blue—a common condition in psychosis—and anaesthesia shifting four inches to the zigzag test was present half-way up the calves.

5. *Rheumatism* is nearly always a conscious simulation:

A man had been disabled for a year and walked stiffly with a stick, but looked fit. His leg muscles were well developed, and he had recently "barked his shins." There was pain to pressure on his thighs and also to pin-prick; joints healthy. He was reported on as a malingerer.

6. *Aphonia*, with whispering voice. There is often hyperaesthesia or anaesthesia in the front of the neck. Accounts in lay papers of these men being cured at picture shows are to be understood when a "pachydermia of the larynx" is cured by one dose of the faradic current.

7. *Abdominal psychoses*, often with vomiting and hyperaesthesia over all the belly wall. If such cases are treated as serious disease they become very difficult to handle.

CONCLUSION.

I would urge that a careful watch should be kept for these cases when they begin. I have only seen one at its origin and succeeded in checking the symptoms at once, but if I were to give an estimate of the number of developed and unrecognized cases I have met the reader would be incredulous. There is no mystery in the diagnosis; ordinary methods of examination supplemented by sensory tests detect the majority of them.

In every injury the extent of possible movements should be early ascertained, and if there are no contraindications those movements should be strongly encouraged. That is good surgery and sound psychology; the lack of such treatment is shown in the case of a man sent to hospital as "old fracture of clavicle, pressure on brachial plexus." He made no attempt to use the arm or hand whilst undressing; all movements could be performed feebly but equally well, and there were no sensory changes. The fracture, which had been plated, was 5 months old, and he had apparently never been made to use the arm.

The number of cases I have seen within a small area indicates how serious is the subject. A man whose functional disorder is diagnosed as organic will probably be a cripple for the rest of his life; the longer he remains under the shadow of a wrong diagnosis the harder will be the cure when, and if, his true condition is recognized. Thus a useful man is lost to the nation and a useless man has to be fed.

A SWISS military medical mission, comprising eight officers, is now in this country, and will visit the military prisoners' camps in order to make a selection of sick German prisoners to be interned in Switzerland.

THE Royal Mail Steam Packet Company has found it possible to resume its fortnightly service between New York, West Indies, and Colon, commencing on December 2nd. The ports of call will be Santiago (Cuba), Kingston (Jamaica), Colon (for Panama Canal and Pacific ports). The round voyage will occupy twenty-three days.

OFFICIAL Italian reports state that the sanitary condition of the concentration camps in Italy where the Austro-Hungarian prisoners are interned are most satisfactory. Owing to the bad health conditions of the Austro-Hungarian armies, all the men taken by the Italians in recent engagements are subjected to rigorous hygienic supervision before being sent to the camps.

IT was reported at the meeting of the London County Council on October 17th that the number of cases then being dealt with under the Mental Deficiency Act at the expense of the local authority for London was 1,049 (497 males and 552 females). Since the Act came into operation notice has been received of 736 other cases in which defect was alleged. The greater number of these are still under consideration, or have been definitely ascertained as not defective, or not subject to be dealt with by the local authority.

PRELIMINARY NOTE ON THE INTRAVENOUS INJECTION OF GYNOCARDATE OF SODA IN LEPROSY,

WITH FURTHER EXPERIENCE OF ITS SUBCUTANEOUS USE.

By SIR LEONARD ROGERS, M.D., F.R.C.P., F.R.S., I.M.S.,
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In a recent paper[1] I recorded a long experience of gynocardates by the mouth, and six months' use of solutions injected subcutaneously in the treatment of leprosy, and stated that this line of treatment had given greater improvement in my hands than any other. I find from my correspondence that as early as July, 1912, I inquired from a leading firm of manufacturing chemists if they could supply me with a soluble form of gynocardic acid or magnesium gynocardate suitable for hypodermic injection, but received a reply in the negative. In my recent paper I regarded gynocardic acid and chaulmoogric acid as synonymous on the strength of the following statement in the last (1915) edition of Martindale and Westcott's *Extra Pharmacopoeia:*

> Chaulmoogra oil contains a quantity of palmitic acid, with three other fatty acids; of these the so-called gynocardic acid (chaulmoogric acid) is supposed to be the active ingredient.

Dr. Pyman has kindly informed me that this view is erroneous, as the work of Moss, and subsequently of Power and Gornall, showed that, on fractionizating the total fatty acids of chaulmoogra oil, those with the higher melting points, including palmitic and chaulmoogric acids, the sodium salts of which are very sparingly soluble in water, first separate, while Moss gave the name of gynocardic acid to the residual acids with low melting point of about 29°C., the sodium salts of which are freely soluble in water. According to Power and Gornall, Moss's gynocardic acid is not an individual substance, but is comprised of a number of fatty acids with different melting points.

What I have used, then, for hypodermic injection in leprosy are the soluble soaps of lower melting point fatty acids of chaulmoogra oil, which, following Moss, are rightly designated gynocardic acid, and which give the characteristic reddish-brown colour, changing to olive green, with strong sulphuric acid. By further fractionization, several acids with different melting points can be separated, which may conveniently be called fractions B, C., etc. During the present year I have been isolating and investigating these with the help of Dr. Sudhamoy Ghose, D.Sc.Edin., working in the laboratory of Professor Rai Chuni Lal Bose Bahadur, and aided by a grant from the Indian Medical Research Fund, obtained through the kindness of Sir Pardey Lukis, Director-General Indian Medical Service, to each of whom I desire to express my thanks.

I have now discovered that the sodium salts of the lower melting point fatty acids can be safely given intravenously in animals in relatively very large doses, and I have already used them intravenously in some twenty well-marked leprosy cases during the last six weeks, with results which clearly show the intravenous route to present important advantages over the subcutaneous one. I therefore propose in the present paper to place on record briefly my methods so as to allow others to test them in this distressing and widely prevalent disease. I should mention that M. Vahram[2] has recently recorded cases of leprosy treated by subcutaneous and intravenous injections of a suspension of a dried and pulverized mixture of chaulmoogra oil and gum arabic, the dose of the oil having been only from $\frac{1}{100}$ to $\frac{1}{30}$ of a grain; yet two cases were reported as improved after some thirty injections. I find the sodium gynocardate I have been using is two hundred times less toxic for rabbits than his insoluble dried chaulmoogra oil, while my preparations have the immense advantages of being freely soluble in water, being, indeed, just the form of substance in which fats are normally absorbed from the digestive canal through the blood vessels, so the soluble gynocardates appear to possess manifest advantages over Vahram's insoluble suspension of dried chaulmoogra oil, which was fatal to rabbits in the small dose of 0.0004 gram per kilo.

*Method of Preparation of Sodium Gynocardates.**

These substances may be prepared either from the cold-drawn chaulmoogra oil, or, as I pointed out in my former paper, from the buttery substance obtained by further compression of the seed of *Taraktogenos kurzii* (products of which alone are dealt with in this paper, although hydnocarpus oils are also being investigated, but the soluble sodium soaps of which have been found to be more irritating when injected subcutaneously than those of *Taraktogenos kurzii*) with the aid of heat obtained by steam circulating around the compression chamber. Hitherto this product has been regarded as a waste product, although I have found it to contain a large proportion of the active substances of the oil. Briefly, the method of preparation is to saponify the oil or butter with caustic potash and absolute alcohol, the soaps thus obtained being converted into fatty acids by means of sulphuric acid. These fatty acids are dissolved in hot alcohol and separated into fractions with varying melting points by gradual cooling and removal of the acids, which solidify at differing degrees. The fractions thus obtained may be further purified by dissolving in ether and recovering again by evaporating off the solvent, by which means they are rendered somewhat less irritating when the sodium salts are injected subcutaneously, for which purpose they must be neutralized accurately with the aid of phenolphthalein. When about two-thirds of the fatty acids have thus been separated the residual third, which is liquid at room temperature in Calcutta (about 28° C.), is obtained by distilling off the alcohol, and may be provisionally termed gynocardic acid C. Of the first separated two-thirds those with the higher melting points of from 43° to 40.8° C. form sodium soaps which are insoluble, or only slightly soluble, in water, and may be termed fraction A. They include palmitic and chaulmoogric acids, and are unsuited for either hypodermic or intravenous use, while it is very doubtful if they are of any value internally. They constitute about half of the total fatty acids. The remaining acids of this two-thirds have melting points from 37° to 40° C. and form sodium soaps which are freely soluble in water and may be termed gynocardic acid B. A still larger number of fractions may be separated out if desired, as we have recently done. The best product for clinical use which we have yet obtained was got by extracting finely divided and dried Taraktogenos seeds with ether and subsequent fractionization as above. The sodium soaps of fractions B and C mixed together caused very little local irritation when injected subcutaneously, while the observations on intravenous injections recorded later in this paper are mainly based on the use of this product, which clearly contains all the lower melting point acids of both the cold compressed oil and the butter obtained by further compression of the seeds with heat. It will be referred to as fractions B and C of the whole seed.

Further Results of Subcutaneous Injections of Gynocardate of Soda.

First, with regard to the further progress of the three cases described in my first paper. Case I has not been seen again, but I have received reports that the satisfactory condition recorded previously is maintained. Case II wrote to me several months after his return to Europe that a leading British authority had declared him to be free from all active signs of the disease, so he may be regarded as apparently cured, although a longer period must elapse before it will be evident if the recovery will be permanent. Case III is still under observation, although she has only been able to attend very irregularly for the injections. After a month's absence she returned with slight recrudescence of the macular patches, but improved again with further treatment, but is still not clear of the disease, having given the method no fair trial.

I have now just completed a year's experience of the subcutaneous method, but, owing to my cases having been, with one exception, entirely out-patients or very advanced cases in a leper asylum, and to the earlier preparations in particular having given rise to considerable local pain and induration, only one patient has been under observation

* Messrs. Smith, Stanistreet and Co. of Calcutta (London agents, Messrs. Evans, Sons, Lescher, and Webb, Ltd., 60, St. Bartholomew's Close) can supply gynocardate of soda made in accordance with my directions either in powder form or in solution in sterile capsules ready for intravenous injection.

for the full period of a year, and eight more have been under regular treatment for six months and over. Five of the cases were of the anaesthetic type and four tubercular. The former includes the patient who has been under observation for a full year, and at the end of eight months all the light patches had disappeared and sensation had returned in them, which was complete except in the largest patch, where there is still slight loss of response to a light touch. An ulcer early healed, and he has regained power in one foot which previously showed foot-drop. During the last four months he has only received occasional injections, so as to keep him under observation, and he continues free from symptoms and appears to be practically cured. Two other cases in which the hands were affected have nearly regained the lost anaesthesia and some power, and continue to improve steadily. The fourth case showed typical claw hands, with great loss of sensation and power, and also foot-drop, as well as anaesthetic patches on the face and neck. After six months' treatment he has regained nearly all the lost sensation, except in one hand, where it is partially restored, and much of the power, being able to shave himself with a razor, and his case is most promising. The fifth anaesthetic patient improved so much that after eight months he considered himself cured and went to his country against advice. He returned after four months with some return of anaesthesia and is improving again under the intravenous treatment. The results, then, in the anaesthetic cases may be regarded as very promising.

Of the four tubercular cases one advanced case in a boy has been under treatment for ten months, during which greatly thickened and nodular ears have become smooth, and his face is now normal. Very few broken down bacilli could be found at the last microscopical examination, and he appears to be nearly free from the disease, the improvement having been most remarkable. The second case showed a number of tubercles on the chin and nose, up to half an inch in diameter, being the most advanced case I have ever seen. Here again the improvement after eight months has been great, although numerous bacilli can still be found, and progress is slow. It has been more rapid since intravenous injections have been given. Two other cases with well marked facial affection have also greatly improved after seven and eight months' treatment respectively, but are still not well. In addition, an earlier case with affection of the face, and hard nodes on the arms containing numerous bacilli at first, after treatment for four months has lost nearly all his lesions, and no leprosy bacilli could be found in the remains of a node recently examined, so in this case the outlook is very hopeful. On the whole the tubercular cases have responded rather more slowly to the treatment than the anaesthetic ones, while I have noticed that there is greater local pain and induration at the sites of the injections in the former class. It is not improbable that intramuscular injections of sodium gynocardate would be more rapidly absorbed and more effective than subcutaneous ones, but I have not yet tested this point. Dr. Victor G. Heiser,[8] obtained his very favourable results in leprosy by intramuscular injections of chaulmoogra oil combined with camphorated oil and resorcin.

The Toxicity for Animals of Gynocardates of Soda given Intravenously.

In the case of pigeons the minimal lethal dose of a 2 or 3 per cent. solution of fractions B and C was 0.045 gram per kilo. Of fraction B it was 0.04 and of fraction C 0.06 per kilo, so the sodium soaps of the lower melting point acids are less toxic for pigeons than the higher melting point ones; 4 and 5 per cent. solutions are more toxic for pigeons than 2 and 3 per cent. ones containing the same amount of the drug. In the case of rabbits, 0.1 gram per kilo in a 3 per cent. solution proved fatal, but 0.075 produced no effect, although it is equivalent to 78 grains in a man of 70 kilos, showing the very slight toxicity of the drug even intravenously. Lieutenant-Colonel W. D. Sutherland, I.M.S., Imperial Serologist, has very kindly tested the haemolytic action of sodium gynocardate, and he informs me that it produces a slight and interesting type of haemolysis, but one which is negligible from the practical point of view. When death takes place in pigeons it occurs within one to four minutes with convulsions. If this period is survived vomiting often occurs, but is followed by recovery. When over 1 grain had been given without any harm in rabbits of 1,500 grams, equivalent to over 50 grains in a man of 70 kilos, I felt justified in trying the drug intravenously in leprosy cases, beginning with one-tenth of a grain, and increasing by one-tenth at each successive dose, using a 2 per cent. solution, and have already given up to four-fifths of a grain with no immediate effect, or any sign of toxic influence, apart from the local reactions and fever to be described later, and rarely some headache.

Technique and Advantages of Intravenous Injections of Sodium Gynocardates.

A 2 or 3 per cent. solution may be made in distilled water (or normal saline), and after sterilization in an autoclave ½ per cent. carbolic acid is added. For intravenous use the solution should be quite clear, and if any precipitate forms it should be filtered and resterilized. The veins in the forearm are distended by stretching a stout piece of rubber tubing around the upper arm, one end being put through in a loop under the other, so that it can be rapidly loosened by pulling out the loop. If the veins are very small the air bag of a sphygmomanometer may be used and pumped as tight as necessary to fully distend the veins. The selected vein is punctured through the skin of the forearm or hand with a fine sharp needle, and, if there is any doubt about the vessel having been entered, a drop of blood may be drawn up into the syringe, and the whole quickly injected before clotting can take place. The pressure band may now be released, the needle withdrawn, and collodion applied on cotton-wool. Little or no irritation results if some of a 2 per cent. solution escapes into the tissues around the vein, so the same vessel may be used repeatedly.

The two great advantages of the intravenous over the subcutaneous method are its painlessness and greater efficiency. As nearly all my cases are Indian out-patients, over whom there is no control, some of them ceased to attend long before any material result could be expected from the subcutaneous injection on account of the pain and induration at the seat of injection. Since the intravenous route has been used no such disappointments have been experienced. Of much greater importance is the more rapid improvement which has been observed to follow the intravenous injections, which is already clearly evident. Several months are required to produce any decided improvement by the subcutaneous method, while, especially in tubercular cases, the progress is apt to be disappointingly slow even after it has started. It is far too early to say what will be the ultimate results of the intravenous medication, but my present experience is decidedly encouraging.

Local Reactions in the Affected Parts.

The most striking result is the occurrence of definite local reactions in the diseased tissues, sometimes accompanied by fever, which has been seen in several cases after from two-fifths to three-fifths of a grain of sodium gynocardate intravenously, of a degree that I have not seen occur after subcutaneous injections, although Dr. Heiser[8] has recorded some local reaction after intramuscular injections of chaulmoogra oil, and I have seen more rapid improvement of lesions in whose neighbourhood the subcutaneous injections of gynocardates have been made. The most decided reaction was in the greatly thickened ears of a tubercular case, in whom fever occurred for three days with redness and swelling of the helix, accompanied by some serous discharge containing broken down leprosy bacilli. After the subsidence of the reaction at the end of ten days the diseased tissues were decidedly softer and less indurated than before, while nodules on the face, not showing the local reaction, were also diminished in size. In another case with very large tubercles on the face, a similar but less acute reaction was also followed by distinct improvement. In two anaesthetic cases, with greatly thickened ulnar nerves, tenderness and slight swelling appeared in the affected portions after intravenous injections, which has been followed by some return of sensation in previously anaesthetic areas of the hand. One of these patients also had fever, but had been previously subject to it. It is thus clear that intravenous injections of the drug have produced selective local reactions in the diseased tissues, which have been most evident in those patients

with the greatest amount of infiltration of the tissues with leprosy bacilli, so they are most interesting and suggestive. It is too early to say whether the drug should be pushed to the extent of producing such reactions, but I am inclined at present to think they are decidedly beneficial when moderate in degree, while I have as yet seen no ill effect to follow them, although the possibility of dissemination of the bacilli in the body must not be lost sight of.

Conclusions.

I have now given about two hundred intravenous injections of gynocardate, and my experience has led me to substitute it almost entirely for the subcutaneous method. Further experience is required to ascertain how far it is advisable to push the doses, but there can be little room for doubt that even half a grain intravenously is likely to have a greater effect than four grains slowly absorbed from a subcutaneous injection. My present impression is that the intravenous method is likely to prove as great an advance on the subcutaneous one as the latter has in my hands on the oral administration of gynocardates or chaulmoogra oil. I desire, however, once more to clearly state that I make no claim to be able to cure leprosy, although I now have hopes that in time even this may eventually result from continued researches on the lines indicated in this and my previous paper on gynocardates, which are largely an extension of Dr. Heiser's important work on the treatment of leprosy by injections of chaulmoogra oil.

In conclusion, I may point out that the reactions produced by gynocardates in leprous tissues, and the apparent destruction of Hansen's bacillus, raises the very important question as to whether some such similar reaction may not be obtained in the case of another human acid-fast bacillus—namely, that of tuberculous disease. Fortunately, this hypothesis can be tested by animal experiment, and I have already commenced a research on the subject.

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THE TREATMENT OF CERTAIN DISEASES OF PROTOZOAL ORIGIN BY TARTAR EMETIC, ALONE AND IN COMBINATION.

BY

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THE great efficacy of tartar emetic in some diseases of protozoal origin has generally been recognized since Plimmer and Thompson introduced it in trypanosomiasis, and since Vianna some years later used it in espundia and ulcerating granuloma, while I myself in the tropics, and Carona and Cristina in Europe, first used it in kala-azar. The credit of having first suggested antimonial salts as likely to be of use in certain diseases of protozoal origin (trypanosomiasis) belongs, however, to Mesnil.

I propose in this paper to give briefly my further results in the use of tartar emetic alone or in combination with the other drugs in yaws (framboesia), kala-azar, Oriental sore, and relapsing fever.

YAWS.

The efficacy of tartar emetic and other antimonial preparations in yaws has been proved by the researches of Brault, Ranken, and myself. Brault and Ranken used always intravenous injections. I have given tartar emetic intravenously, by intramuscular injections, by the mouth, by rectum, by inunction, and I have compared the results obtained by giving tartar emetic alone with those obtained by giving it combined with various other drugs. In practice one must keep in mind the following two points: (1) The mode of administration of the drug must be easy, as in certain yaws districts there are thousands of patients to be treated, and very often the only medically trained persons available are Singhalese or Tamil apothecaries who could not be entrusted to perform intravenous injections. The oral administration is of course the simplest of all, but the emetic effects of tartar emetic given in that way are well known. (2) Tartar emetic, in my experience, though efficacious in yaws, is far from being speedily curative, and gives much better results when combined with other drugs of which potassium iodide is most beneficial; mercury has practically no action.

Bearing in mind the above two points I devised, after a certain number of experiments, as a routine treatment the mixture which is generally known after my name in the tropics. The original formula is as follows:

Tartar emetic	gr. j
Sod. salicyl.	gr. x
Potass. iodid.	ʒ j
Sod. bicarb.	gr. xv
Aquae	ad ʒ j

This dose is given diluted in three or four ounces of water three times daily to adults and young persons above 16 years; half doses are given to children from 8 to 14 years of age, and one-third or less to younger children. To European patients I generally give half the doses I have mentioned, as they seem to be more affected by the various drugs contained in the mixture. The results of the treatment are generally speedy and very satisfactory; in fact, in many recent cases strikingly so, as confirmed by Spaar and others. The active drugs in the mixture are the tartar emetic and the potassium iodide, while the sodium salicylate, though not having any specific effect on the malady, seems to hasten the disappearance of the thick yellow crusts capping the framboeting nodules. The presence of a large amount of sodium bicarbonate, though making the mixture very inelegant, decreases its emetic properties and prevents to a certain extent symptoms of iodism, thereby rendering possible the administration of very large doses of both drugs.

Recent Modifications in the Preparation of the Mixture.

In one of my papers on the subject (*Journal Ceylon Branch* British Medical Association, 1914) I stated that the mixture is pharmacologically a very inelegant one, owing to the incompatibility of potassium iodide and tartar emetic with alkalis. It is cloudy and has a sediment. At the time of administering it, however, a dose is diluted with three or four times the same amount of water, and then becomes fairly clear. Several observers, though generally confirming the efficacy of the mixture, have noted its pharmacologically erroneous composition. Some communications on the subject were received by the Editor of the BRITISH MEDICAL JOURNAL, who, thinking that the matter of getting a permanent "tartar emetic potassium iodide mixture for yaws" was important, had various experiments made on the best way to prepare it. The following is the report received by the Editor, a copy of which he has kindly forwarded to me for remarks.

The precipitation of the antimony, which occurs on keeping the mixture, can quite easily be prevented by the addition of small quantities of tartarated soda, glycerine, or syrup, the quantities tried being as follows:

(1)	Tartar emetic	gr. j
	Sod. salicyl.	gr. x
	Potass. iodid.	ʒ j
	Sod. bicarb.	gr. xv
	Sod. tartarat.	gr. x
	Aquae	1 fl. oz.
(2)	As (No. 1), but, in place of the sod. tartarat., glycerine	2 fl. drm.
(3)	As (No. 1), but, in place of the sod. tartarat., syrup	1 fl. drm.

All the above mixtures showed no appreciable insoluble antimony after standing twelve days, No. 1 being perhaps slightly the best, although for practical purposes the differences were of no account. A control experiment, in which the liquid was made up according to the original formula, resulted in a large proportion of the antimony being precipitated.

With the kind assistance of Dr. Baines, chemist to the Sotoriotissa Military Hospital, I have made up the various formulae, and have come to the same conclusion. The addition of glycerine, however, seemed to give the clearest mixture.

The modified formula of the mixture is therefore as follows:

Tartar emetic	gr. j
Sod. bicarb.	gr. xv
Sod. salicyl.	gr. x
Potass. iodid.	ʒ j
Glycerine	ʒ ij
Or syrup	ʒ j
Or sod. tartarat.	gr. x
Aquae	ad ʒ j

It is given in the same doses as the original formula, and, as is the case with the original mixture, only half doses should be given to European patients. It should always be given diluted with water. I wish to express my indebtedness to the Editor for the interest he has taken in the subject, and the successful modification of the mixture he has been instrumental in bringing about.

KALA-AZAR.

Tartar emetic was first used in the treatment of kala-azar in 1914 by myself in the tropics and Carona and Cristina in Europe. In Corfu, where I have been recently stationed for several months, infantile leishmaniasis is fairly common, as shown by Gabbi and others, and I have had the opportunity of treating four cases there; all were children between 2 and 4 years of age. Two were sent to me by Dr. Battinos, whom I desire to thank for his kindness. One of the children was in a dying condition when the treatment was started, and died five days after beginning it. The other three cases all recovered, and in them tartar emetic was given solely by intravenous injections in one; in another by intravenous injections, intramuscular injections, and by oral administration; in the third one the drug was given by intramuscular injections and by the mouth.

Intravenous Injections.

The usual 1 per cent. tartar emetic solution in sterilized normal saline answers well: 2 to 10 c.cm. of this solution are given daily for five to ten days, then every other day or twice a week. At times, especially in cases of relapsing fever, as I will mention later, I have used the following formula:

Tartar emetic	... 4 grams.
Sol. acid. carbolici (2 per cent.) ...	... 100 c.cm.

Half to 2 c.cm. is diluted at the time of injection with sufficient sterile saline to bring it to 5 c.cm., and the whole injected into a vein, taking the usual precautions. It is, of course, necessary to make sure that the needle is actually in the vein, and that none of the fluid escapes in the surrounding tissues.

Intramuscular Injections.

These are extremely convenient, and especially useful in children in whom the superficial veins are often small. Unfortunately, as well known, the usual solutions of tartar emetic and other antimonial salts are very painful when given in this way, and may induce the formation of an abscess. The following formulae, however, will be found fairly satisfactory:

Formula No. 1.

Tartar emetic	... gr. viij
Ac. carbol.	... ♏ x
Glycerin.	... ʒ iij
Aq. dest.	ad ʒ j

Half to 1 c.cm. every other day in the gluteal regions by intramuscular injection.

At the time of the injection the patient as a rule feels absolutely no pain, but a few hours later in most cases there is a certain amount of inflammation accompanied by a modicum of pain, which is quite bearable, and followed by a slight amount of localized infiltration, comparable to what one sees after intramuscular injections of quinine hydrochloride or mercury perchloride salt solution (1 in 1,000), though generally very much less severe. If the pain and infiltration should be severe, hot fomentations will be found very useful. The presence of carbolic acid decreases the pain induced by tartar emetic and makes the solution sterile. The solution is prepared in bulk in a sterile bottle, and tested for sterility forty-eight hours after preparation; it may then be put up in small 1 c.cm. ampoules, which it is advisable to keep in a cool dark place.

Formula No. 2.

Tartar emetic	... gr. viij
Ac. carbol.	... ♏ x
Glycerin.	... ʒ iij
Sod. bicarb.	... gr. ½
Aq. dest.	ad ʒ j

The only difference from No. 1 formula is the presence of sodium bicarbonate, which makes it slightly alkaline, while No. 1 is slightly acid. The results seem to be the same, and the pain induced by it appears to be about the same as with formula No. 1.

Formula No. 3 (Martindale).

Antimonii oxidi	... gr. ⅔
Glycerin.)	
Aq. dest.)	ãã ♏ xv

(One ampoule.)

This preparation is good and its use practically painless, but I have the impression that the curative action of antimonium oxide is inferior to tartar emetic.

Oral Administration.

The oral administration of the drug is often useful in conjunction with the intravenous or intramuscular injections. The following is the formula of the mixture I use at the present time:

Tartar emetic	... gr. v
Sod. bicarb.	... gr. xxx
Glycerin.	... ʒ j
Aq. chlorof.	... ʒ j
Aquae	ad ʒ iij

(ʒ j to ʒ ij in water t.d.)

In adults the dose can be doubled. It may be noted that in the very first case of kala-azar treated with tartar emetic, besides giving it intravenously I gave it also by the mouth in the form of my yaws mixture.

ORIENTAL SORE.

The curative effect of tartar emetic in dermal leishmaniasis has been noted by many observers. I have treated recently a case in Corfu, a boy, aged 16 years, with a typical oriental sore on the left cheek; microscopical examination was positive. He received twelve intramuscular injections (formula No. 1) and took 2 teaspoonfuls of the tartar emetic mixture three times a day. A complete cure was obtained very rapidly. In this case the signs of improvement appeared so quickly that I did not use any local treatment, though the local application of antimonial ointment, as advised by G. C. Low, is often successful, even when it is the only treatment carried out.

RELAPSING FEVER.

I used tartar emetic in 14 cases of relapsing fever in Macedonia last year and 3 cases in Corfu this year. As I propose to give my observations on the treatment of the disease as well as the results of the clinical and etiological investigation of the malady, the etiological spirochaete of which I am inclined to believe to be a slightly different variety from *S. recurrentis*, in a separate paper, I will limit myself here to the statement that tartar emetic appears to be beneficial in relapsing fever, but far less so than salvarsan, neo-salvarsan, and similar preparations. It seldom cuts short the first attack of fever, but in a large percentage of cases it has apparently prevented the relapses. I have generally given it once or twice daily by intravenous injections, using the usual 1 per cent. tartar emetic saline solution (2 to 10 c.cm. at a time), or oftener, and I think with better results, the tartar emetic carbolic solution the formula of which I have already given.

In a few cases I have given also intramuscular injections (formulas Nos. 1 and 2) and by the mouth. For oral administration I have generally used the tartar emetic, glycerine, bicarbonate mixture I have already mentioned. At times I have used the yaws mixture (one-third doses), in which I have incorporated liquor arsenicalis 3 to 5 minims in each dose. The intravenous injections give the best results.

CONCLUSION.

Tartar emetic is of great efficacy in various protozoal diseases. Its powerful action in trypanosomiasis has been well proved, and it can be considered a specific in espundia, granuloma inguinale, kala-azar, and oriental sore. It is efficacious in yaws, especially if combined with other drugs, and seems to have a beneficial action also in relapsing fever.

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HYDROTHERAPY AS AN AGENT IN THE TREATMENT OF CONVALESCENTS.

BY FRANK RADCLIFFE, M.B., CH.B.EDIN.,

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THE hydrotherapeutic installation at the Command Dépôt, Heaton Park, Manchester, was the first of its kind to be established by the War Office, and although the department has only been in existence since the end of June, it may be of interest to those who are about to commence this form of treatment, and to those in charge of hospitals, if some mention is made of the results obtained up to the present time.

The experience gained while resident at the Devonshire Hospital, Buxton, made me familiar with ordinary spa treatment. Two types of bath, however, which are in existence at the present time, are quite new to this country, and physicians of hydrotherapeutic practice have to learn their actions and the results of treatment.

The department at Heaton Park consists of three huts which originally were officers' quarters. These have been connected by a covered way, and a boiler house has been built, in which heating apparatus and a water storage tank has been installed. These huts have been internally reconstructed, two are adjacent and are converted into a dressing-room and office, a douche, needle and shower bath room, a slipper bath room, a pool bath room, and *eau courante* and massage departments; lavatories and store room are placed in the subway, and the third hut is partly a massage department, and partly consists of rest rooms for the after-treatment of cases.

Out of an average of 4,000 troops, 170 men are treated daily.

The staff includes four blind masseurs who deal with cases requiring general massage, and two masseuses, who administer massage manipulation and exercises in the *eau courante* department.

It is not necessary to discuss all the forms of treatment as many of them are quite familiar, being the same as those used in the spa institutions of this country. The pool bath and *eau courante* bath in their present form originated in France, but modifications have recently been made in this country.

In treating large numbers of men it is essential from a point of view of economy in water, attendance, and supervision, to have apparatus which is capable of treating a number of men at one time. For this reason a pool bath, which is a large square bath, 3½ to 4 ft. deep, is installed for treating at least twelve men at one time. The water is running, and is kept at a temperature of 92° F. by means of a thermostatic valve in the boiler house. The room in which the bath is situated is kept as quiet as possible, and it is not too well lighted, for it is essential that it should possess an atmosphere of quiescence. The time for which the men are immersed may be as long as one hour. They pass from the bath to the rest room, where they go to bed for an hour or more. Their daily life is kept as free from excitement as possible, but at the same time their surroundings are made cheerful.

Many men have been invalided from the various theatres of war suffering from shock and disordered actions of the heart. These men have been subjected to strain and stress of an exceptional nature. Their nervous systems have been tried to the full. The pool bath was designed for the treatment of these cases, the idea being that immersion in a large volume of water kept at a temperature below body heat would have, along with the after-treatment above mentioned, a marked sedative effect. Up to the present the results with regard to shock cases have not come up to expectation. The men say "their nerves are steadier." Invariably they sleep when lying in bed after the bath, and certainly for the time being the sedative effect is marked, but, so far, it is not continuous. Some of the men feel "better" for hours after. Others say they "feel weak and cannot eat." Others say they feel all right for so many hours and then get exhausted. However, whatever their complaint or otherwise may be, the tremors, which may be marked in these cases, persist, and other physical signs do not disappear excepting the associated tachycardia and shortness of breath on exertion.

But from the point of view of curing the men, or rendering them fit for military service they are not satisfactory.

The results in cases of "disordered action of the heart" have, up to the present, been very satisfactory. The pulse-rate is taken before, during, and after the bath, in the lying position. The slowing of the pulse is most marked after treatment. I have discharged several of these cases after an average of one month's treatment, and they are now able to undertake without discomfort "light physical training," which consists of slow movements without violent running or jumping, and light route marching, which consists of a march of two to three miles at their own pace. The shortness of breath, which is so common a symptom in these cases, is greatly relieved, and I hope that after one or two months' treatment by "light physical drill" they will be able to stand the full "physical training," which consists of quick movements with violent running and jumping.

While this type of bath is not a complete cure, it is a preparation for graduated physical training, which undoubtedly is the best form of treatment for such heart affections. The bath definitely quietens the circulation and enables training to be undertaken in a way which is impossible without previous hydrotherapeutic treatment.

Still more satisfactory is the *eau courante* department. Definite results have been obtained in a large number of cases, and at least 90 per cent. of the discharges have been so satisfactory that physical training could be undertaken at once. The cases treated in this department include frost-bitten feet and trench feet, contracted and painful scars, painful amputation stumps, and localized neuritis following wounds.

The foot that has been frost-bitten presents signs of defective circulation, cyanosis, sometimes giving way to pallor, with a constant feeling of cold and aching. The running-water bath improves the circulation, and after a few immersions the symptoms entirely disappear. Old sprains which present a sodden appearance become, under this treatment, engorged with blood, and a reparative process is begun. The scar, which is painful to the touch and blue in appearance, becomes soft, red, and pliable. The painful amputation stump responds to treatment very rapidly. The course of treatment usually lasts from fourteen to twenty-eight days, and at the end of that time the combination of the running-water bath with massage has invariably rendered voluntary movements possible. This effect is not obtained by the ordinary bath, because the temperature is not kept constant, the congestion is not so deep, and the circulation is not hastened to the same degree.

There are two patterns of baths—one for the arm and one for the leg. The water, which is running, is kept at a temperature of 105° to 115° F., according as to whether the patient can or cannot stand the high temperature. The leg, or arm, or foot, is immersed in this bath for thirty-five minutes, the patient then passes to the massage department, where massage and exercises are given.

When this department opened several cases had been previously treated by dry massage for several weeks without definite relief. After fourteen days' treatment by the running water bath and massage the pain had entirely gone, and the feet in cases of frost-bite were ready for hardening. The men were able to undertake physical training and route marching, and up to the present no patients have returned for treatment. On the other hand, many have left the dépôt and returned to their units in Class "A" (active service).

It would greatly strengthen the equipment of the civil hospitals of this country if they installed a hydrotherapeutic establishment in connexion with their electrical departments as a means of the treatment of convalescents. Both the medical and surgical sides of the hospitals would find plenty of opportunities for using the shower and needle baths as tonic agents in the treatment of debility, the slipper and douche in the treatment of rheumatism, the pool bath for the treatment of heart cases, and the cases which could be found in the surgical department of any hospital would keep the running water bath fully occupied.

At present the baths are used mainly for the arm and leg cases, but there are in existence body baths and probably these will in time become as widely used as the former.

NOTES ON BLOOD CULTURE TECHNIQUE.

BY

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A FAIRLY extensive experience of blood cultivation during the past few months, while in charge of a mobile laboratory in France, has shown that, although the method usually employed of drawing blood from a vein direct into ox bile, and thence plating on to special media, is excellent for the typhoid-coli group, it does not detect the numerous other organisms which may be found in the blood in cases of pyrexia of unknown origin. The special media, or the ox bile, appear to have an inhibitory effect on these. For this reason I have for some time used, in addition to ox bile, two other fluid media, one similar in chemical composition to ox bile, and the other a broth prepared from trypsinized bullock's heart. Instead of plating out on to Drigalski-Conradi and MacConkey media only I use also Conradi's brilliant green, Fawcus's brilliant green, and a modification of the pea extract trypsin agar used at the Royal Army Medical College, Millbank.

In every case of vein puncture it is absolutely necessary first thoroughly to cleanse the skin in the vicinity with alcohol before painting with tincture of iodine. A piece of rubber tubing, which is so fastened round the arm that it can be instantly released, is used to constrict the blood flow, and a wide-bore 20 c.cm. needle passed into any suitable vein at the bend of the elbow or its vicinity. Not less than 5 c.cm. of blood should be drawn direct into each of the three liquid media, and an additional 2 c.cm. into a test tube for a Widal reaction for typhoid, paratyphoid A and B by Dreyer's method.

The tubes are incubated, and next morning plated out in the following manner: The five plates are each marked with a grease pencil into three sectors, and the names of the three fluid media marked on the sectors, one on each. The fluid media are then in turn taken up and a loopful of fluid transferred to the corresponding marked sector of each plate. The plates are then returned to the incubator for examination the following day. If no growth has occurred, the process must be repeated, if necessary, for three successive days.

The extra time taken up in transferring in all fifteen loopfuls of fluid from the three media as compared with one or two only when using ox bile, is well repaid by the increased number of positive results obtained. It happens not infrequently in the case of the delicate organisms like pneumococci and the feebly virulent streptococci that growths may only appear on one or two of the whole fifteen sectors, although in these cases growths may usually be seen in the broth medium.

Already a large number of cases of pyrexia of undefined origin, a term which includes cases of so-called "trench fever," have been shown by this extended method of blood culture to be due to bacterial infections of the blood, but it is essential to examine the blood when the fever is at its height.

For the composition of the two liquid media which I use with the ox bile when collecting the blood, and for perfectly prepared media generally, I am indebted to Sergeant H. A. H. Howard, B.Sc.Lond., R.A.M.C., my laboratory attendant.

My analysis of the cultivation of the blood of the last 100 cases of fever of unknown origin examined by me gives the following results:

Negative	42	*Micrococcus tetragenus* ...	23
Typhoid	3	Pneumococcus	9
Paratyphoid B	7	Staphylococcus	2
Flexner	2	Streptococcus	5
Shiga	1	Gram-negative coccus ...	2
Coli communis	4		100

* Dr. CHARLES JOHN GIBB of Newcastle-on-Tyne, the oldest medical practitioner in the district, for many years lecturer at the Newcastle College of Medicine, who died on May 13th, aged 89, left estate of the gross value of £143,022, of which £120,384 is net personalty.

THROUGH gifts of Dr. Howard Kelly and Mr. Blanchard Randall, the Johns Hopkins Hospital, Baltimore, has now one of the finest medical portrait galleries in the world. The collection, which is valued at £20,000, consists of forty-eight portraits, some of which go back to the early part of the sixteenth century.

DIGESTED AND DILUTED SERUM AS A SUBSTITUTE FOR BROTH FOR BACTERIOLOGICAL PURPOSES.

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(From University College, Cardiff.)

THE nourishment of microbes is a passive one, at any rate at the beginning of their life. It depends upon such substances as can pass through the walls of the microbes and be absorbed by the protoplasm. The best example of this principle is the growth of microbes in media made with sugar. A small quantity of sugar makes the growth quicker and richer; if the percentage of sugar is increased the growth is arrested. I have made experiments to ascertain whether serum, which in normal conditions is a bad pabulum for the majority of microbes, becomes a suitable medium for them when diluted or digested—when, in other words, the molecule of the albumin is broken down and becomes smaller.

The medium is prepared as follows:

(*a*) One volume of sheep or ox serum is mixed with one volume of tap water, and boiled till it becomes milky.

(*b*) A pancreas of a pig is minced and extracted with 400 c.cm. of distilled water in the presence of chloroform for twenty-four hours. (The first experiments were performed with 1 per cent. trypsin, but for the sake of economy I used afterwards pancreatic extract, which is equally suitable for the purpose); and

(*c*) A piece of the upper part of the small intestine is extracted in the same way in order to activate the pancreatic extract.

(*d*) To one litre of (*a*) is added 100 c.cm. of (*b*) and 10 c.cm. of (*c*), and digested at 60° C. for the night. Next morning the flask contains an amber-coloured liquid with fine flocculi floating in it. Filtered through Chardin paper, the amber-coloured liquid passes through, and the flocculi remain in the filter. The liquid is collected and sterilized at 120° C. for fifteen minutes, then tubed and resterilized.

In this medium the growth of the *B. coli* group, the streptococci, the staphylococci, *B. subtilis*, *B. proteus*, and *fluorescens*, is so luxuriant that in comparison normal broth may be said to yield a scanty growth. Meningococcus shows little or no growth.

Indol Formation.—Theoretically it is to be expected that with this medium indol should be detected, because the tryptic digestion gives rise to tryptophane, from which indol is formed by the microbes. As a control tryptophane medium was employed. The Böhme-Ehrlich reaction has always given similar results with the two media in twenty-four hours.

The Sugar Test.—When to this medium is added 1 per cent. of various sugars generally used for the identification of microbes, the same reactions are observed as with the control broth. But a better and more useful medium for sugar test is described later on.

Solid Media.—The utility of this medium is shown specially in the making of agar.

Three grams of thread agar are added to 100 c.cm. of tap water and sterilized at 120° C. for fifteen minutes, then 100 c.cm. of the digested serum above described is added, mixed thoroughly, tubed, and sterilized at 120° C. for fifteen minutes.

A beautiful transparent medium is obtained in which microbes of the *B. coli* group, *B. proteus*, *fluorescens*, *pyocyaneus*, staphylococcus, streptococcus, Nabarro's butter bacillus 5, Grassberger bacillus 1, *B. tuberculosis*, grow very heavily. The meningococcus again does not grow in this medium. Anaërobic bacilli, like *B. perfringens* and *B. sporogenes*, grow very well. Thus the *B. pyocyaneus* and *fluorescens*, at 37° C., give pigmentation in twenty four hours. The *B. proteus* shows in this agar also a pigmentation of oak-like colour.

This medium, employed for isolation of the microbe, I found to yield at least the same results as ordinary agar.

Diluted Serum for Sugar Test.

This is prepared as follows:

(*a*) To one volume of sheep or ox serum three volumes of tap water is added, and sterilized at 120° C. for fifteen minutes. A milky-coloured liquid is obtained.

(*b*) Solutions of various sugars are prepared and filtered through a Berkefeld filter. These solutions are diluted in (*a*) to 1 per cent.; litmus solution is added and sterilized at 100° C. for ten minutes.

This medium planted with various strains gives clotting

of the serum if a certain amount of acidity is formed. Should gas be present, then the clot shows bubbles. It is specially suitable for *B. coli*, and can be substituted for the Barsikow, which is certainly more expensive and more difficult to prepare.

I publish these observations as the only expense incurred in making a litre of an efficient medium is that for the gas used. This medium is easy to prepare, and serves all the purposes served by ordinary broth and ordinary agar.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

BILIARY REGURGITATION AFTER GASTRO-ENTEROSTOMY.

IN his recent interesting and suggestive Hunterian Lecture on the surgical treatment of duodenal ulcer,[1] Sir John Bland-Sutton touched on a number of questions not yet definitely answered—amongst others that of the closure or leaving open of the pylorus. The advisability of closing the pylorus (by excision or otherwise) is a point on which surgical opinion is at present sharply divided, and its consideration involves that of other and inter-related questions, one of which is the occurrence of post-operative biliary regurgitation. While not nearly so common as formerly it is still far from unknown. Its prevention and recent comparative rarity have been variously attributed by different workers to (1) judicious choice of cases (the exclusion from the operable list of cases of gastric atony); (2) the avoidance of the flattening and obstruction of the lumen of the jejunum at the anastomotic stoma formerly produced by the use of a triple line of suture or by the practice of cutting out a window in place of making a slit incision in the jejunal or gastric wall; (3) the adoption of the "no-loop" method; (4) the closure of the pylorus. The employment of the *x* rays with opaque meals frequently fails to determine in a given case of regurgitation either the cause of the regurgitation or the route (pylorus or anastomotic stoma) by which it occurs.

In view of the existing differences of opinion as to both the cause and the route of biliary regurgitation, it is important that cases in which either cause or route is clearly ascertained should be recorded. The following case has recently been under my care:

Mrs. B., sent to me in November, 1915, had the symptoms of duodenal ulcer, and at the operation on December 3rd, 1915, the ulcer was demonstrated, and a posterior "no loop" gastro-jejunostomy performed. Within six weeks copious and constantly recurring biliary vomiting set in and continued till May 25th, 1916, when, assisted by Dr. Charles Bennett, I re-opened the abdomen. We found the duodenum and pylorus very greatly dilated. On displacing the transverse colon so as to expose the anastomotic stoma and then compressing the duodenum we found that nothing would pass along the afferent jejunal loop. The duodenal contents regurgitated into the stomach through the pylorus and not through the stoma. And further, the cause of the regurgitation was evident. The afferent jejunal loop was firmly fixed, flattened out and kinked, by adhesions to the under surface of the transverse mesocolon. The efferent loop was quite free from adhesions.

The explanation of the obstruction of the afferent loop by adhesions while the efferent loop remained free appears in this case to be clear. Adopting the "no loop" form of operation, I have for some time been in the habit of following the suggestion of various surgeons in dividing the ligament of Treitz in cases in which the jejunum on being pulled taut to the stomach remained more or less kinked, and had done so in Mrs. B.'s case. Division of the ligament is necessarily done close to the intestine, and is therefore practically a detachment of the ligament from the intestinal wall, which is left raw, and liable to adhere to surrounding structures, such as the mesocolon. Momentary consideration will show that the raw and subsequently adherent portion will, when the anastomosis is complete, be on the afferent loop.

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Lecturer on Clinical Surgery, Western Infirmary, Glasgow.

[1] BRITISH MEDICAL JOURNAL, February 19th, 1916.

Reports of Societies.

ACCIDENTAL HAEMORRHAGE.

AT a meeting of the Section of Obstetrics and Gynaecology of the Royal Society of Medicine on October 5th, when the President, Dr. G. F. BLACKER, was in the chair, Dr. A. J. MCNAIR reported a case of concealed accidental haemorrhage with intraperitoneal bleeding. A woman, aged 34, died three and a half hours after delivery, under anaesthesia, of her seventh child in the thirty fourth week; the placenta was found to be completely detached, and about three pints of recent clot came away when the uterus was emptied. After death 24 oz. of recently shed blood were emptied out of the peritoneum, and a number of superficial lacerations were detected on the anterior surface of the uterus, with small haemorrhages among its muscle bundles, which were histologically normal.

Mr. CHARLES OLDFIELD and Dr. REGINALD HANN reported a case of acute toxaemia of pregnancy with accidental haemorrhage treated by Caesarean hysterectomy. In this instance the patient was a primipara aged 38, and it appeared that the accidental haemorrhage was a symptom of pregnancy toxaemia. As the bleeding was severe and the cervix closed, Caesarean section was undertaken in the eighth month. The placenta was entirely detached. The uterine cavity held much blood clot, and the walls were so disorganized by haemorrhages that the uterus was removed. All the toxaemic symptoms—albuminuria, headache, and blindness—disappeared, and the patient recovered.

Dr. FLETCHER SHAW read a paper on Caesarean section and hysterectomy for accidental haemorrhage. Six cases were described; in all Caesarean section alone was undertaken, except in one in which hysterectomy was performed a few hours after delivery of the child by uterine section, because haemorrhage continued. All the patients were multiparae with a high degree of albuminuria. In the three who recovered that symptom disappeared within a few days, so that the bleeding was probably due to toxaemia. In cases of accidental haemorrhage it was only in very rare instances, when uterine contraction could not be induced, as in all these six subjects, that this radical method of treatment was required.

A number of pathological specimens were also exhibited.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY.—An ordinary meeting of the society was held on October 6th, when there was a large attendance of members and visitors. The retiring president, Dr. LEONARD DOBSON, inducted his successor, Dr. ARTHUR SAUNDERS, who presented the Keightley Medal to Dr. Dobson and congratulated him on the success of his year of office. Dr. Saunders then delivered his presidential address on some aspects of the throat and nasopharynx in their relation to general medicine. After recapitulating the chief varieties of naso-pharyngeal infections, he dwelt particularly on modern bacteriological developments as aids to diagnosis, and discussed the treatment of tonsils and adenoids and their bearing when diseased on other organs and on the general condition. On the motion of Dr. RICE-OXLEY, seconded by Dr. SHUTER, a vote of thanks was accorded to the President for his address.

A SOCIETY has been founded at Zürich for the laying out of gardens in the city to be cultivated by school children.

THE county medical officer of health for Carlisle has prepared a pamphlet which has been issued by the county council with the title *All About Baby*. It contains an address to mothers, in the course of which it is said that out of every eight children born in Cumberland one has died before it has reached the age of one year. It states that the county council has appointed a staff of health visitors, whose services are at the disposal of those who require and wish skilled advice, and that the medical staff of the health department will always be glad to advise mothers. The bulk of the pamphlet consists of a series of notes on the health of expectant mothers and the care and management of infants and young children, which seem to be very much to the point.

Reviews.

MAN'S ARBOREAL ANCESTRY.

During the last four or five years the British public has renewed its interest in all that relates to man's evolution. Authors and publishers have not been slow to meet the revived demand for literature dealing with the complex problem of man's origin. The books which have appeared are of two kinds—first-hand books and second-hand books. The contribution which Professor Wood Jones has just made to this literature in the book which he has named—not very happily—*Arboreal Man*,[1] is not only first-hand, it is first-rate. Those who are familiar with current anatomical literature recognize that he has earned for himself a place in the very front rank of British anatomists. His new book, be it ill or well named, will enhance that reputation and secure for itself a permanent place on the select bookshelf of all who seek to unravel the problem of how man has come by his present estate in body and in mind.

It must be confessed that our author is an image breaker. Up to Darwin's time anatomists and theologists had placed man's body on a pedestal; to them it was the "crown of creation." When Darwin's influence became dominant, the high estimate of man's estate was not lowered; he was still pedestalled and regarded as the "highest and latest product of evolution." From that pedestal, whereon he had been placed by Archdeacon Paley, Sir Charles Bell, Professor Goodsir, and a host of others, Professor Wood Jones takes Man down and again places his feet on firm ground. The human hand, the complex wrist, the forearm, with its facile powers of supination and pronation, and the shoulder girdle are not new features. They are the opposite; they are primitive and old. Man and his brother primates have retained the ancestral mammalian characters, so far as the upper extremity is concerned, to a greater degree than any of the other mammalian orders. To find the counterparts of the primate arm—which man has retained in all its parts—the anatomist has to descend to the lowest and most ancient reptilian forms. Somehow in man's ancestry the identical elements of the ancient reptilian arm have been retained. To account for that fact Professor Wood Jones propounds the theory, that the stock to which man belongs—the Primates—must have become differentiated at an early geological epoch—probably the Triassic—an epoch at which the early mammals still retained their reptilian limb characters. The arboreal methods of life proved favourable to the retention of all the elements found in the primitive reptilian limb. He passes in review the parts and features of the human body, analysing in detail their functional nature, and comes to the conclusion that the upright posture, and all its adaptational features, which are usually regarded as man's prerogatives, are not peculiar to him, but a possession which he shares with all the higher primates, owing them to the prolonged arboreal pilgrimage of his ancestors. Most of man's bodily characters were acquired during the tree-living stage of his ancestry. His foot, certain minor features of his lower limb and spine, were acquired in his post-arboreal phase.

The section of Professor Wood Jones's book which will make the most vivid appeal to readers is that dealing with the human brain. He has been profoundly and profitably influenced by the researches and teaching of Professor Elliot Smith, but he also adds much of his own. His inquiries and methods differ from those of his anatomical predecessors in that he does not confine himself to dead structures; he is a keen, accurate, and cunning observer of man and beast, alive as well as dead; his observations on the dead and living go hand in hand, and it is because of that combination that he has managed to obtain a better and truer insight to many difficult problems than his predecessors. He has other advantages: he is a most facile draughtsman and the possessor of a clear, nervous, vivacious, and fascinating pen.

[1] *Arboreal Man.* By F. Wood Jones, M.B., D.Sc. London: E. Arnold. 1916. (Med. 8vo, pp. 238; 81 figures. 8s. 6d. net.)

NOTES ON BOOKS.

The third edition of the admirable little book on *Medical Electricity*[2] by Drs. Morton and Cumberbatch has been brought thoroughly up to date, and contains much that is new about important methods of treatment and the action of electricity—always a most obscure subject—in the treatment of disease. The chapter on the physics of electricity has been placed at the end of the volume instead of at the beginning; here the word "Leclanche" should be "Leclanché." The bulk of the volume is occupied by chapters on ionic medication and ionization, galvanization, faradization, diathermy, the use of static electricity, and similar subjects. The authors write in the most practical style, and it is clear that they have a vast amount of experience in electrical treatments of all sorts. Throughout the text they spell the word cathode "kathode," though "cataphoresis" is spelt with a "c." The book should be in the hands of all who want a sound and sensible account of a branch of medical treatment that, in injudicious hands, lends itself to quackery with the utmost facility.

For those who live in India, or who may chance to find themselves engaged in elementary surgical and medical work in that country, three little books recently published contain a great deal of useful information. Colonel R. J. Blackham's *Indian Manual of First Aid*,[3] now in its fifteenth edition, and the same author's *Primer of Tropical Hygiene*,[4] now in its third edition, are short and serviceable little books, filled with practical hints and useful information for the layman, and not too deep for average readers. Colonel Blackham has also written a book on *Indian Ambulance Training*[5] for the benefit of local voluntary aid detachments, now appearing for the first time, that seems excellent for the purpose for which it is intended. Books such as these have appeared in great numbers during the last two years; it is clear that the war will have excellent results in the propagation of knowledge of the rudiments of hygiene and medical and surgical science throughout all classes of society in our own country as in others.

It must always be difficult for a reviewer to form a just estimate of poems written in a dialect with which he is unacquainted, even when, as is the case with *The Sentimental Bloke*,[6] the dialect resembles one with which he is familiar. Often for several lines together the phrases might be spoken by a cockney, and then comes some word which sends the reader to the glossary the author has considerately provided. Not a few of the words and turns of speech explained in the glossary are, however, as well known in London as in Melbourne. The verses seem to us to be genuine poetry, and draw a vivid picture of a type in which faults and virtues are more strongly contrasted than in more sophisticated persons, but in which native force of character enables the better qualities to triumph.

The twenty-fifth edition of *The Annual Charities Register and Digest*[7] is a book invaluable to those who wish to know how best to help cases of distress, and how to prevent their occurrence. It has a most valuable introduction by Mr. C. S. Loch; and, with its elaborate indexes, it is a volume that is easy to consult, in spite of its size and the great amount of varied information it contains. To all those engaged in organized charitable work it is so well known as to need no further recommendation here. It should be carefully studied by those who are inclined to shower indiscriminate charity on all who ask for alms.

[2] *Essentials of Medical Electricity.* By E. R. Morton, M.D., Trin. Tor., F.R.C.S.Edin. Third edition, revised and rewritten, with addition of new matter by E. P. Cumberbatch, M.A., M.B., B.Ch. Oxon. Kimpton's Essential Series. London: H. Kimpton. 1916. (Cr. 8vo, pp. 317; 72 figures. 6s. net.)

[3] *The Indian Manual of First Aid.* By Colonel R. J. Blackham, C.I.E., R.A.M.C. Fifteenth edition. Bombay: C. Claridge and Co. 1916. (5 by 3¾; pp. 207, 70 figures. 1 rupee.)

[4] *A Primer of Tropical Hygiene.* By Colonel R. J. Blackham. Introduction by W. E. Jardine, Esq., C.I.E., I.C.S. Third edition. Bombay: C. Claridge and Co. 1916. (4¾ by 3½; illustrated. 12 annas.)

[5] *Indian Ambulance Training.* By Colonel R. J. Blackham. Bombay: C. Claridge and Co. 1915. (4 by 5¼; pp. 151, 19 figures. 12 annas.)

[6] *The Songs of a Sentimental Bloke.* By C. J. Dennis. Third edition, with cover and design by Hal Gye, and foreword by H. Lawson. Sydney: Angus and Robertson, Ltd.; London: The Oxford University Press. 1915. (Pott 4to, pp. 134; illustrated. Price 3s. 6d.)

[7] *The Annual Charities Register and Digest.* With an Introduction by C. S. Loch. Twenty-fifth edition. London: Longmans, Green, and Co., and the Charity Organization Society. 1916. (Demy 8vo, pp. 1066. 5s. net.)

LOW'S *Handbook to the Charities of London*,[8] now in its eighty-first year of publication, has a preface devoted to the new King's College Hospital at Denmark Hill, and gives a brief account of over 1,200 charitable institutions in and about the metropolis. It contains a great deal of the information required by almoners, secretaries, and charitable workers generally, and will often be useful to medical practitioners. The information it contains appears to be well up to date, and it has a good index.

Italy is a country that produces a great deal of excellent original work in medicine year by year, and supports a number of excellent medical periodicals containing well-documented original papers composed somewhat in the German style. It is to be feared, however, that Italian medical and scientific periodicals have but few British readers, familiarity with the Italian tongue being sadly rare among the inhabitants of Great Britain. Yet Italian is not a difficult language to learn to read, owing to its kinship with Latin and French. We would recommend to the attention of any one anxious to learn Italian Mr. PANAGULLI'S *Italian Grammar Self-taught*[9]—a simple and unassuming little book providing a practical and concise elementary course in the Italian language as it is now spoken and written.

[8] *Low's Handbook to the Charities of London, 1916* (81st year of publication). London: Sampson Low, Marston and Co., Ltd. 1916. (Cr. 8vo, pp 261. 1s. net.)

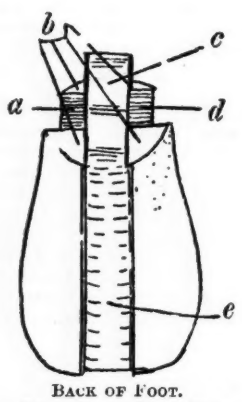
[9] *Italian Grammar Self-taught.* By A. C. Panagulli, Principal of the London School of Italian. London: E. Marlborough and Co. 1916. (Cr. 8vo, pp. 104. 1s. net: cloth, 1s. 6d. net.) *Key to Italian Grammar Self-taught.* (Pp 29. 6d. net.)

MEDICAL AND SURGICAL APPLIANCES.

The Ipswich Leg.

MESSRS. GRISS AND SMITH, of Ipswich, make an artificial leg which seems to possess certain advantages. With some minor exceptions to be mentioned, it is made entirely of stout oak-bark-tanned leather. It is provided with artificial knee, ankle, and metatarso-phalangeal joints. The upper part or bucket, cut from one piece of leather, is moulded on to the stump. The leg piece is also of leather, and the upper bucket, supported by steel side irons, works inside the top of the lower. The advantage claimed for the use of leather is that the leg, when complete, is lighter than patterns in which wood is extensively used. The Ipswich leg for an amputation above the knee does not weigh more than 6 to 7½ lb., as compared with

FIG. 1.



BACK OF FOOT.

FIG. 3—*a*, Bearing. *b*, Notches to limit excursion of rocking movement. *c*, D shaped projection. *d*, Bearing for end of plug projection. *e*, Groove for back elastic or spring.

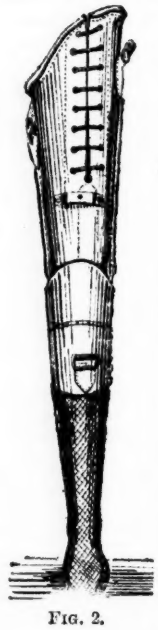


FIG. 2.

12 lb. or over, which is a common weight for an artificial leg. The upper bucket being closely applied to the stump, the weight of the body is distributed, and, if necessary, a pneumatic cushion can be placed within it, upon which the end of the stump bears. This cushion can be altered by the wearer so as to adapt it to the length of the stump. The leg is suspended by means of shoulder braces, which, when properly adjusted, divide the weight equally between the two shoulders. The upper bucket, as has been said, is moulded to the stump, and it is fixed, and can be adjusted from time to time by the lacing provided. The side supports, starting from the upper bucket, are continued below the knee joint inside the lower leg, and the knee is further controlled by an elastic webbing band in front, the tension of which can be adjusted by the wearer. The ankle-joint is of simple design, but appears to meet the conditions satisfactorily. Into the lower part of the leg is fitted a wooden plug, and the heel and hinder part of the foot are also of wood. From the foot part there is a D-shaped projection which fits into a slot formed by two projections from the plug. The ends of these projections rest and work on bearings on either side of the foot below the pin-hole to which they all register. The two parts are connected by a metal pin or spindle made with a square head at the one end and a nut at the other; if desired they can be made to work in ball bearings. The excursion is limited at the back of the heel by elastic or a spring. The front part of the foot is of leather, and works at the level of the metatarso-phalangeal joints on the posterior wooden part of the foot. The whole is so adjusted that when the wearer lifts the foot from the ground and swings it forward the toe is raised, and in this way it is possible to mount a kerb or go upstairs, or, we are told, to cycle, even with amputation above the knee. When the amputation has been made below the knee the stump can be introduced into the lower part of the artificial leg. The apparatus is light and strong, but the construction is simple, and any small repairs could, we imagine, easily be executed by a saddler—a matter of some little importance when the wearer resides far from an instrument maker.

ROYAL MEDICAL BENEVOLENT FUND.

AT the last meeting of the Committee, held on October 10th, thirty-one cases were considered, and £300 granted to thirty of the applicants. The following is a summary of some of the cases relieved:

L.R.C.P.Eng., aged 71, a widower who practised at Great Torrington and West Africa, and latterly has acted as a ship's surgeon. Suffers from ague contracted in Africa. On his last sea trip the ship was torpedoed, and so he has not risked another voyage. Only income the old age pension. Voted £6 in six instalments.

Daughter, aged 60, of L.R.C.S.Edin. who practised at Liverpool. For many years worked as a governess but had to give it up after a long illness. Only income derived from letting a furnished room in her cottage, but of late has not been successful, and, owing to high prices, unable to manage. Voted £5.

Daughter, aged 49, of M.D.Glasg. who practised in Ireland and died in 1888. Applicant is a teacher of music, but since the war has not been able to get pupils. Has aged mother, a pensioner of the Fund, who is helpless and requires her daughter's attendance, which prevents applicant from undertaking work away from home. Voted £5.

Daughter, aged 43, of M.R.C.S.Eng. who practised at Notting Hill and died in 1885. Mother, who for many years was helped by the Fund, has died recently from cancer. Applicant and sister have tried to earn by letting lodgings, but, owing to living on the Kent Coast, have been unsuccessful lately. Propose giving up house and trying to obtain other work, but want some immediate help. Voted £10.

Widow, aged 30, of L.R.C.P. and S.Edin., who held an official appointment and died in April, 1916. Applicant left with five children, aged 1 to 9½ years, and the only money an insurance of £200. Has removed to Scotland, and hopes to be able to make a little by letting furnished rooms. Highly recommended. Voted £10 in two instalments.

Widow, aged 65, of R.A.M.C. doctor who died in June of this year. Only income a pension of £34 per annum. Has two children married and unable to help. Long illness of husband, who had to live on his pension for many years. Applicant too old to obtain work but she is willing to do what she can. Voted £10.

Daughter, aged 48, of M.D.Lond. who practised at Newcastle-on-Tyne. Applicant was left quite unprovided for, and, owing to indifferent health of herself and sister, unable to work. A friend who used to help unable to do so now owing to depleted income in consequence of the war. Relieved twice (some years ago), £17. Helped by the Guild. Voted £12 in twelve instalments.

Daughter, aged 56, of M.R.C.S.Eng. who practised at Newport, Mon., and died in 1892. Since father's death has endeavoured to make a living by keeping a small school, but owing to the increased cost of living unable to make it pay. Relieved once, £12 in twelve instalments. Voted £12 in twelve instalments.

Daughter, aged 60, of M.R.C.S.Eng. who practised at Dorking and died in 1873. Applicant left unprovided for, and is a permanent invalid. Income 5s. per week from another charity, and a friend allows her £25 a year. Relieved four times, £40. Voted £10 in two instalments.

(To be continued.)

British Medical Journal.

SATURDAY, OCTOBER 21st, 1916.

CEREBRO-SPINAL FEVER AND FILTRABLE VIRUS.

The discovery of the meningococcus in the cerebro-spinal fluid of cases of cerebro-spinal meningitis in 1897 by Weichselbaum has been confirmed in all subsequent outbreaks in which bacteriological investigations have been made, so that the constant association of this micro-organism with cerebro-spinal fever, and its absence in other forms of meningitis, is now well established. The successful results that have been obtained in the treatment of cases by specific antimeningococcus serum support the view of the part played by the meningococcus in the etiology of this disease. Before such specific serum was available the mortality ranged from 60 to 80 per cent. By submitting patients at a sufficiently early stage to intraspinal injections of specific antimeningococcus serum this mortality has been reduced by Flexner to 36 per cent., by Dopter to 8.2 per cent., and by Netter to 7.14 per cent. We understand that striking success has also been obtained recently in this country by similar treatment.

The mode of spread of cerebro-spinal fever was at first extremely puzzling to the epidemiologist because of the rarity of instances of direct infection, and of the comparative frequency with which cases spring up in different parts of an infected area with no apparent connexion between them. An explanation of the sporadic nature of such outbreaks appeared to be supplied by the discovery by Albrecht and Ghon in 1901 of the meningococcus in the nasopharyngeal secretion of cases, and by the subsequent demonstration of this micro-organism in the nasopharynx of a number of persons in the environment of such cases. These carriers, it was concluded, conveyed the germ to others until it was received by a person who developed meningitis.

In order to fulfil all the requirements of an etiological agent, it had to be shown that the meningococcus was capable of reproducing the disease in a susceptible animal. At the time when Weichselbaum discovered the meningococcus he demonstrated that it produced suppurative meningitis in the dog on intradural administration; Flexner succeeded in monkeys by the same means; experiments on a large number of animals by v. Lingelsheim and Leuchs, showed that dog-faced baboons were very susceptible to the meningococcus. By intrathecal injection of a culture of the meningococcus into an animal they produced the clinical picture of cerebro-spinal fever as well as the essential pathological lesion.

In 1898 Loeffler and Frosch, during an experimental investigation of foot and mouth disease, discovered that lymph taken from the vesicles after dilution and passage through a filter composed of diatomic earth of density sufficient to hold up ordinary bacteria reproduced that disease in susceptible animals. This experiment proved that the virus of foot and mouth disease was either a soluble toxin or a living organism of extreme minuteness. Owing to the high degree of dilution to which the infective material could be submitted without losing its power to reproduce the disease, Loeffler and Frosch formed the opinion that the virus of foot and mouth disease was an extremely minute living organism, and suggested that the virus of other diseases, such as small-pox, measles, and typhus, the etiology of which was still unsolved, might also belong to this category. These suggestions have since been confirmed by others in respect of measles, yellow fever, dengue, poliomyelitis, and mumps, and of certain diseases of a more localized nature affecting human beings, as well as in rinderpest, horse-sickness, and numerous other diseases affecting animals.

A good deal of experimental work has been done on the subject of filtrable virus of one or another kind, though the difficulty and expense of working with material the chief or only reagent for which is provided by a susceptible animal is obvious. Considerable progress has, however, been made. I 1913 Lipschutz[1] classified diseases due to this class of organism into two main groups: First, acute general infections such as measles, typhus, and dengue; and, secondly, diseases showing special localization in certain organs and tissues. The latter are subdivided according as the viruses show a special predilection for (*a*) epidermal or epithelial tissue, such as the viruses of molluscum contagiosum, warts, and trachoma; (*b*) dermotropic viruses such as vaccine-variola, foot and mouth disease, and chicken-pox; (*c*) neurotropic viruses such as those of rabies and poliomyelitis; (*d*) haemotropic viruses such as those producing the leukaemia of the fowl and the pernicious anaemia of the horse, and (*e*) organotropic viruses such as those of peripneumonia and mumps. Some of these filtrable viruses have been grown outside the body and studied microscopically, notably that of peripneumonia of cattle, and, more recently, those of rabies and of poliomyelitis; the majority, however, have not yet been so cultivated. Certain facts have also been ascertained with regard to the biological characters of filtrable viruses in general. They are unaffected by cold, and those associated with disease of the human subject are inactivated or destroyed by exposing them to a temperature between 55° and 60° C. Filtrable virus may be destroyed also by certain chemical agents, such as acids or alkalis or potassium permanganate, but they preserve their vitality for a considerable time in the presence of others, such, for instance, as solutions of carbolic acid. Different filtrable viruses vary in their susceptibility to the same chemical reagent. A point of importance is that they live for a long time in the presence of glycerine. When dried in the body secretions in which they occur and kept in a dark, cool place in capillary tubes, filtrable viruses continue to maintain their vitality for a considerable period, but if putrefactive bacteria develop, the virus is apt to be destroyed.

As regards immunity, the use of killed virus as a prophylactic vaccine has proved disappointing, the most successful results having been obtained by using the virus either after attenuation or after admixture with immune serum. Susceptible animals that recover from an attack with such modified virus become immune.

While much, therefore, remains to be determined, the principal features of a filtrable virus seem to be that it reproduces in a susceptible animal the specific disease from which it has been derived; that it is destroyed, as a rule, by exposure to a temperature of 55° to 60° C., and also by certain chemical reagents and that animals recovering after infection with such filtrable virus acquire specific immunity thereto.

[1] *Handbuch der pathogenen Mikroorganismen.* Kolle und Wassermann, Jena, 1913. Bd. 8, SS. 345-425.

In some diseases which have been found to be due to filtrable virus certain bacteria occur with great constancy, and, prior to the discovery of the fact that a filtrate from such a source could reproduce the disease, and in the absence of evidence to the contrary, these bacteria had been looked upon by some as playing an etiological part. This was notably the case in swine fever, where a certain non-lactose-fermenting bacillus, *B. suipestifer*, had been found to occur with much frequency. The fact established in 1903 by de Schweinitz and Dorset that swine fever could be reproduced by a filtrate from an affected pig proved that *B. suipestifer* was merely a secondary infecting agent. The well-known tendency of the *Streptococcus pyogenes* to occur as a secondary infecting agent is perhaps a further instance of similar association between filtrable virus and a bacterium in the case of measles, and possibly in that of scarlet fever as well.

During the present outbreak of cerebro-spinal fever Dr. E. C. Hort and his colleagues have made a special study of cerebro-spinal fever from the standpoint of filtrable virus. In a paper published in this JOURNAL for October 14th Hort and Caulfeild gave an account of the observations which have led them to infer the presence of a virus of this kind in the cerebro-spinal fluid of cases of the disease. Monkeys injected subcutaneously or intraperitoneally with cerebro spinal fluid from patients suffering from cerebro-spinal fever have been found to develop continued fever, and a similar result has been observed to follow injection in the same way of filtrate from a culture of the meningococcus itself. By cultivation of material taken from the affected monkeys in serum broth, they claim to have again produced fever in further monkeys. In a paper commenting upon the results published in the same issue of the JOURNAL Professor Adami emphasized the importance of the findings and quoted several analogies and instances for the purpose of illustrating their significance. It is, of course, important when drawing conclusions from results of this kind to be certain that they will bear the closest scrutiny from the point of view of technique. The result obtained with cerebro-spinal fluid from cases of cerebro-spinal fever, or from a culture of an organism such as the meningococcus which by reason of its autolysin is continually contributing dissolved endotoxin to the medium in which it is placed, makes it particularly necessary to exclude the possible action of such toxin in the present case. With every care, monkeys in captivity in this country are prone to develop pyrexia, the source of which is not always revealed by *post-mortem* examination and bacteriological examination. The action of such toxin derived from the meningococcus could be excluded by a control experiment with the same material as used by these investigators after submitting it to a temperature of 55° to 60° C.—a procedure which should inactivate filtrable virus, but leave toxin, if present, unaffected. This control test does not seem to have been carried out in the present instance. The analogy Professor Adami draws with swine fever does not seem quite sound, because the filtrate in that case actually gives rise to swine fever; whereas here the essential lesion of cerebro-spinal fever—namely, meningitis—was not reproduced, but merely pyrexia. The possibility of filtrable virus occurring as a secondary infecting agent in cerebro-spinal fever must also be borne in mind, for our knowledge of these agents is at present in its infancy. We hope that these experiments will be continued and repeated by others, for the etiology of cerebro-spinal fever is not yet by any means solved, and the prevalence and distribution of filtrable virus of all sorts is a subject upon which information will be awaited with interest by those who have at heart the progress of bacteriological and medical knowledge.

MEDICAL REMUNERATION.

THE Memo. 229/I.C., explanatory of the system of remunerating medical practitioners under the Insurance Acts, which was published in full in the SUPPLEMENT of last week, has the merit of being perhaps the most lucid of all the documents issued by the Commissioners. There can be no doubt that it well explains the difficulties with which they and Insurance Committees are faced in collecting and distributing the medical benefit funds, and goes a long way towards explaining many of the anomalies and apparent injustices of which so many panel practitioners have complained. Its importance makes it unnecessary to apologize for an attempt to summarize its main features, but no summary can properly take the place of a careful study of the original, a duty which every panel practitioner owes to himself.

The Memorandum begins by pointing out the exact nature of the bargain made between the Government and the profession at the commencement of the insurance scheme, when the Government undertook that for each insured person entitled for a full year to medical benefit the sum of 8s. 6d. should be provided to pay for medical treatment and drugs. It is important to note that the full sum of 8s. 6d. is only payable for a full year's risk; for persons entitled to medical benefit for only a part of a year the amount is reduced proportionately. Thus, for a person entitled to benefit for only one day in the year, only $\frac{1}{365}$th of 8s. 6d. would be payable to a central pool. This applies equally to the 6d. for domiciliary treatment of tuberculosis, but that is not here in question, as it does not enter into the central pool, being provided separately by each Insurance Committee out of the sanatorium benefit funds. This statement of the bargain between the Government and the profession is strictly correct, but the Commissioners at once found themselves in a difficulty when they tried to determine what exact fraction of a year each insured person is entitled to medical benefit—that is to say, whether the whole 8s. 6d., or, if not, what fraction of it is to be credited to the central pool for each insured person. It is clearly shown that in actual practice, owing to removals, deaths, persons coming into benefit or becoming disentitled to it, etc., it is absolutely impossible to obtain the data for such an exact calculation; a nightly census of the whole insured population would be needed, which is of course out of the question. Some formula had therefore to be framed which would give the nearest practical approximation to the theoretical exact amount which should be credited to the pool in order to carry out the national bargain. Accordingly, at the beginning of 1914 the Commissioners introduced what they call the "normal system," under which the full yearly sum is debited against each society for every contribution card surrendered by the society in respect of the first half of the year, and for every member who was at the commencement of the year aged 70 years or upwards. This fixes the amount which every society has to pay to the central pool, and the Treasury grant follows this. The same is done in the case of deposit contributors, exempt persons, and members of the Army and Navy Fund entitled to medical benefit whose accounts are kept by the Commissioners. It is evident from this that the central pool really receives more than it is entitled to in the case of (1) persons

who enter into insurance during the first half of the year, but not at the beginning of it—for example, the full 8s. 6d. is credited to the pool for a person who only enters into insurance on the 25th of June—and (2) persons who lapse from insurance through death or any other cause at any time during the year after paying one or more contributions in the first half-year—thus the full 8s. 6d. is paid for a person who pays only a single contribution in January and then dies.

As a set-off against the above cases, where the medical pool receives more than the amount to which it is entitled, in the following cases the pool suffers loss: (1) Persons entering into insurance in the second half of the year, (2) persons who are permanently incapacitated, and (3) persons who through illness or other cause are unemployed throughout the first half of the year. In these three classes no contribution cards are surrendered for the first half of the year, and the medical pool receives nothing in respect of these persons, though they are entitled to medical treatment. The Memorandum then makes the important statement that the Government actuary calculates that the sums the pool receives in excess of its due are at least the equivalent of the sums which the pool loses in the last-named classes which surrender no contribution cards for the first half-year. *Prima facie* it seems a most remarkable thing that these two contra accounts should in normal times so nearly balance as is stated, but as no figures are available to the profession to enable any check to be applied, the fact must be accepted in faith. It is further explained that carelessness on the part of societies in forwarding the cards, though it might delay a final settlement, can make no difference eventually; and as the money which the societies themselves receive depends on the number of cards which they transmit, it is to the direct interest of every society to forward all the cards, the interests of societies and doctors being in this respect identical.

But however fair this system may be in times of peace, it was seen soon after the outbreak of the war in August, 1914, that some modification was necessary owing to the large number of insured persons joining the forces and thus ceasing to be entitled to medical benefit. By obtaining figures from the Admiralty and War Office, the Commissioners made what they considered a proper adjustment for 1914, and state that the adjustment resulted in a full payment being made as required by the bargain between the Government and the profession. A further adjustment was also made in 1915, and to prevent a long delay in the settlement of that year, the figures for 1914 were taken as the basis, adjustments being made for the abnormal influx of workers into insurance, and in respect of the number of enlistments and discharges as ascertained confidentially from the Government. The fact was also taken into account that the medical benefit year 1914 was eleven days short of a full calendar year, while 1915 was a full year of 365 days.

On comparing the figures given in the Memorandum for 1913 with those for 1915, it will be seen that in England alone the amount distributed from the central pool amongst Insurance Committees for medical benefit (of course not including the "domiciliary" sixpence) was £437,597 less in 1915 than it was in 1913, though 1913 was three days short of a full year. This represents a decrease in the insured population of 1,117,386 persons. We are not told whether the whole of the central pool was distributed for 1915, but in any case it is understood that a proper adjustment will be made in the settlement for 1916 when the necessary data become available. The Commissioners admit that their system may require alteration as conditions change, and they make the following very important statement: "For instance, it may prove that the number of permanently incapacitated persons entitled to medical benefit will have so increased owing to the war that the excess charges paid by societies in certain cases will no longer compensate for the absence of charges where a card is not surrendered," and the Commissioners accept full responsibility for determining "as accurately as is humanly possible the sum of money which is due from societies to the doctors." It should be clearly understood what this means. It simply implies that the Commissioners will do what lies in their power to see that the national bargain between the Government and the profession is kept. That may be all that the Commissioners are empowered to do, but it does not touch the further question whether that bargain will continue, or even now continues, to be fair in view of the much higher sickness incidence resulting among the insured owing to the war, as soldiers, either disabled or with damaged health, are returned to the panel lists. The present Memorandum may be read with a certain amount of satisfaction, but the profession should not lose sight of the fact that there is nothing in it—possibly nothing could be put into it—to assure adequate remuneration for the increased work which will be imposed on the panel doctors owing to the raising by the war of the sickness incidence among the insured.

Turning next to the distribution of the central pool among Insurance Committees, while deploring the undoubted inflation of the index registers, the Memorandum states that it is probable that there is about the same degree of inflation throughout the country and that it hardly lies in the power of any one Insurance Committee to get its register into any appreciably better condition than the average, as the causes of inflation are so widely spread over the kingdom. That being so, the central pool may with fairness be divided among the committees in proportion to the numbers on their index registers, and this is what is done under the present system. In 1913 the central pool for England was credited with the proper sum on 10,654,854 insured persons, and the total pool was £4,491,021. But the total index registers showed 10,951,483 names, which according to the above figure is too many by 296,629. If, then, the register of a particular committee contains 500,000 names, it is assumed to be inflated in the same proportion as the total inflation, and the committee will receive $\frac{500,000}{10,951,483}$ of the total pool—that is, it gets £205,041. Delay on the part of societies in notifying new entrants does not, it is contended, affect the central pool, as, according to the system, the pool is credited on the basis of the stamped contribution cards returned for the first half of the year. But some doubt may still be felt whether the Commissioners have satisfactorily shown that particular Insurance Committees are not often prejudiced by delay on the part of local officials of societies resulting in their index register being less than it ought to be, so that such a committee obtains a smaller proportion of the central pool than it ought to receive.

The Memorandum deals finally with the distribution by Insurance Committees to individual doctors. The financial provisions of the doctors' agreement are quoted, and it is stated that the doctors' lists are inflated owing in the main to the same causes as lead to the inflation of the index registers. Especially is the inflation of the doctors' lists increased since the war began, as so many enlistments have not been notified to Insurance Committees or even to societies.

"A doctor cannot, therefore, arrive at his remuneration merely by multiplying the number of insured persons nominally on his list by 7s." Theoretically exact payments, taking account of the exact number of days per annum each doctor is at risk for each insured person on his list, cannot be expected so long as it is impossible to take an elaborate nightly census of the whole insured population. It is admitted that insured persons suspended from medical benefit may, owing to the omission by approved societies to notify Insurance Committees, have received treatment after the date of their suspension, but the Commissioners believe that such cases must be rare and cannot be avoided by any tightening up of machinery, and state that steps are being considered to deal with this difficulty, and that no effort will be spared to secure that societies duly observe their obligations in this respect.

The above outline of the Memorandum by no means does justice to it as many details of interest are here omitted, but it will probably be felt on reading the original that the final section dealing with the distribution by Insurance Committees to individual doctors leaves many points unexplained, and might well have been amplified.

THE KUT FAILURE.

IT would not be easy to mention any British military operation on so large a scale, since Walcheren, which failed so completely, and at so heavy a cost in casualties, medical and surgical, as the attempt to relieve General Townshend's Anglo-Indian force besieged in Kut. An analysis published elsewhere in this issue (p. 567) of Sir Percy Lake's dispatch describing the operations from January 19th to April 30th, is somewhat fuller than those given of previous dispatches from other fronts because serious accusations have been made with regard to the failure to safeguard the health of the troops, and to make proper provision for the wounded and sick. These accusations have not spared the medical service, and early in the year there seemed to be a disposition in some quarters to make it the scapegoat. A commission of inquiry was appointed by the Commander-in-Chief in India, consisting of Sir William Vincent (an Indian judge) and the Quartermaster-General in India; to them Mr. Ridsdale, commissioner of the British Red Cross Society, was subsequently added. According to a statement made to us by Sir Victor Horsley in a letter written from Amara shortly before his lamented death, the Commander-in-Chief referred to this commission as a "medical commission"; but as it contained no medical member and having regard to all the circumstances some apprehension was naturally felt that it would not be very competent to express a sound opinion upon the cause of the defects alleged with regard to the medical arrangements. Sir Victor Horsley stated in his letter that as the result of his experience in Mesopotamia and his conversation with the Commander-in-Chief in India, he feared that the case of the medical officers in Mesopotamia might be prejudiced through the report of the Vincent Commission, and he added that the immediate cause of the appalling failures in the medical arrangements was the utterly defective transport. As the Quartermaster-General's department is that responsible for transport, it may without prejudice to anybody be admitted that the fear expressed was not unfounded.

It appears from statements made by the Secretary of State for India that the Vincent Commission in its report criticized the conduct of individual officers, but had not an opportunity of examining them. Subsequently a commission of inquiry, with Lord George Hamilton as chairman, was appointed by Act of Parliament, and is now sitting in private to inquire into the whole matter; it will have the opportunity of examining officers, and of calling for documents; among other documents it will have before it the report of the Vincent Commission, which meanwhile is not to be published. The matter being thus *sub judice* the Government has taken the course, in response to public demand, of publishing the dispatch of Sir Percy Lake, commanding the Indian Expeditionary Force in Mesopotamia, on the attempt to relieve Kut, and the tribute he pays to the energy and devotion to duty shown by the personnel of the medical service in contending with difficulties against which they had been rendered powerless to provide in advance, will be read with satisfaction by their comrades in the R.A.M.C., and by the whole profession.

Speaking of the first phase of the operations directed by him, Sir Percy Lake says that after the attack on the Hannah post all the wounded were "as far as possible" brought in during the withdrawal, "but their sufferings and hardships were acute under the existing climatic conditions when vehicles and stretcher-bearers could scarcely move in the deep mud." Things had somewhat improved at the date of the attack on the Es Sinn position at the beginning of March; the officers and subordinates of the Medical Service and Army Bearer Corps, Sir Percy Lake states, "collected and attended to the wounded under heavy fire in a manner which called forth the admiration of the whole force." In his general summary he says that the medical services in Mesopotamia were overworked and undermanned. During the advance in January divisions arrived without their field ambulances, and the first river hospital ship did not come up until February. Subsequently there was a steady increase in personnel, and that the power of the medical service to deal with the situation was considerably improved was shown by the prompt action after the attack on March 8th.

Sir Percy Lake's dispatch leaves a great deal unsaid, but the picture he gives of the difficulties of the ground, aggravated by the break in the weather, is sufficient to prove that the deficiency in transport not only on the ground over which fighting took place, but down the river, must have rendered it wholly impossible to evacuate the wounded to Basra in the manner the medical services would have desired, and to which the men were entitled. During the actual operations the level water-logged ground, the absence of cover, the heavy rain, and the constant threat of inundation from the flooding river, combined to produce a state of things in which the troops carrying only their kit were unable to advance—this fact alone gives a vivid picture of difficulties with which the medical service and its stretcher-bearers had to contend. Improvements were slow to come; matters were still very bad in July and August, but the country has recent assurances of responsible ministers that they are now, if not wholly satisfactory, at least very much better.

BRITISH MANUFACTURE OF ORGANIC CHEMICALS.

MUCH has been said and written on the very backward state of the manufacture of organic chemicals in Great Britain as compared with Germany, and many reasons have been assigned for our relative inferiority, such as insufficient appreciation of research by manufacturers absence of co-ordination between the work of differen

firms, and neglect by the Government. No doubt there is a good deal of truth in the various allegations that are made to account for the facts, and there is reason to hope that means are being taken, and will be continued, to remove all the contributory causes. The recent formation of an Association of British Chemical Manufacturers appears to be an important step in this direction. It is, of course, true of a very large number of manufacturing processes that they can be more economically carried out on a very large scale, and that combinations of manufacturers can therefore hold their own in most markets against smaller firms working individually; but this is true in a particular sense of chemical industry, especially the manufacture of coal-tar derivatives of which dyes and synthetic drugs are perhaps the most important branches. In this kind of work the by-products in the manufacture of one article or class of articles are the starting point for the manufacture of other classes; as an example may be mentioned the close association which has existed in Germany between the production of dye stuffs and that of such drugs as phenacetin, antipyrin, acetyl-salicylic acid, etc. In many cases also very different products are obtained from the same intermediate substances, and the manufacture of "intermediates," as they are called, is in itself a huge industry. It may be taken, therefore, that a condition necessary for successful competition with German manufacture of organic chemicals of all sorts is a much higher degree of co-operation among manufacturing firms than has hitherto prevailed among British concerns. First among the objects of the new association is "to promote co-operation between British chemical manufacturers." Other objects of scarcely less importance are the development and financing of research, the improvement of methods of education in chemistry, the foundation of scholarships and lectureships, and the task of placing before the Government the views of manufacturers on matters affecting the industry. The association aims at being British in the wider, imperial sense, a British individual being defined as a British subject who is habitually resident within the limits of the British dominions, including protectorates and British spheres of influence. It is, of course, important that an association of this kind should in actual fact include all the principal firms, and should be in a strong financial position. We understand that the firms already included in the new association have an aggregate capital of some twelve or fourteen millions, and as the minimum subscription is 25 guineas a year and increases *pro rata* with the capital of the subscribing firm up to a maximum of 250 guineas, it appears to be assured of an income sufficiently substantial to enable it to do much useful work. At a recent meeting of the Textile Institute held at Leeds University, Professor Perkin is reported to have said, "With real energy and determination, but not otherwise, we shall be able to succeed in about ten years." Many other prominent organic chemists are associated with Professor Perkin in assisting the development of the dye industry in this country, and if the work is carried on in the spirit indicated by the remark just quoted, there is good ground for hope that success will be obtained. The manufacture of synthetic drugs will, no doubt, progress hand in hand with that of dyes, and in due course we may hope that not only will the more important products of this kind be manufactured in this country on a scale adequate to our needs, but that new drugs of value will be the outcome of increased research. British medical men have been more than sufficiently pestered in the past by appeals on behalf of a host of new German synthetics, only a small proportion of which have finally proved to have real therapeutic value, and there is room for a considerable suspicion that many of them have been placed on the market and artificially boomed in order to create an outlet for what would otherwise have been waste products. We hope and believe that in the development of British manufacturing organic chemistry there will be no attempts to put products on the market until they have really been thoroughly tested and proved of value, and this will not be one of the least of the subsidiary advantages of the development of the industry in this country.

THE PUBLIC HEALTH IN WAR TIME.

In the annual report of the Local Government Board for 1915–16[1] a notable example of economy is afforded. The report itself is contained in a few pages instead of occupying a bulky volume, but its value is not diminished by the necessary condensation. The incidence and treatment of tuberculosis continue to occupy attention, and accommodation has been steadily increased. Already there are 11,227 beds available in 288 institutions. More than half of these have been provided by voluntary bodies. Tuberculosis dispensaries, on the other hand, have been mainly established by local authorities, and would appear also to be steadily on the increase. It is eminently satisfactory to find that due provision is being made for the treatment of soldiers of all ranks who have been invalided on account of tuberculous disease, and in a later part of the report it is stated that special means are now being adopted to detect the presence of the disease at the outset of the military career, and to prevent, by means of notification, the enlistment of men deemed liable to develop any form of tuberculosis under the stress of military service. The cost of treatment has usually been divided between the local authority and the Board, where soldiers have been concerned, but for the general service of local dispensaries and the provision of beds it has been found advisable to make payments in accordance with estimates rather than to regard the actual amount expended, but this method of payment will cease when more accurate returns of expenditure have been received. Agreements with local authorities have been only for short terms, for the most part, as it is obvious that the whole system will have to be moulded in accordance with acquired experience as time goes on. Liberal grants were made for capital expenditure up to July, 1915, but have ceased as from that date. Of infectious diseases other than tuberculosis, measles has assumed a prominent place. Local outbreaks interfered very seriously with military training about a year ago, and led to the order for compulsory notification. Much has been done by the agency of properly trained health visitors employed by local authorities to secure all possible measures of isolation and effective nursing, and the matter has been energetically taken up by the Central Council for District Nursing in London. Its methods and the rules it has laid down will doubtless be found useful in the guidance of similar effort elsewhere. In another direction the system of home visitation has been found to be most efficacious. Skilled and sensible advice given to young mothers before and after confinement must have an influence for good in preventing infant sickness and mortality, and the vast importance of safeguarding the first years of life at the present time has led to the extension of the visiting system to children up to school age. It is most satisfactory to learn that the number of untrained midwives is steadily diminishing, and that, by the increasing ministrations of educated and sympathetic women, knowledge and common sense are taking the place of ignorance and superstition.

THE FRENCH CHILD AND ITS EDUCATION.

At a meeting of the Child Study Society on October 12th, presided over by Sir James Yoxall, M.P., a lecture was delivered by Mr. Cloudesley Brereton, divisional inspector under the London Education Authority, on the subject of the French child. In spite of Rousseau, he said, the child was a very late discovery in France, and there was a

[1] Forty-fifth Annual Report of the Local Government Board, 1915-16. Part III: Public Health, Local Administration, Local Taxation and Valuation. Price 2d.

surprising lack of child literature of the Kipling or Molesworth type, and of poetry of the Stevenson type. The French child, the lecturer said, was extremely precocious in the good sense; he ascribed this maturity of mind to the fact that in so many families there was but one child, who was consequently more dependent on his parents for society than was the child who had brothers and sisters. If Peter Pan was a child who never grew up, the French child was one who was never young, and from a very early age it had an archness and artfulness, again in the good sense, which were not observed generally in English children. He did not believe that French children or French people were ultimately cleverer than English, but the English took longer to develop. The French boy of eighteen had the same maturity as the English young man of twenty-five, but in physique the French lad was often inferior to his comrade of the same age on the other side of the Channel; this the lecturer ascribed largely to the cutting down of school games and sports since 1870 in order that what were thought to be more useful branches of education might be developed under pressure, and thus the French people get intellectually square with the Germans. English education the lecturer thought to be over-analytical, tending to the worship of isolated facts and details, whereas the French considered things as a whole, synthesizing first and analysing afterwards. The defects of French education were insufficient accuracy as regards facts, a tendency to become superficial, and some disposition to lay undue stress on tradition. If France could only double the number of its children, at least in those cases where there was only one child in the family, it would mean a recovery for the nation of that imaginative adventure which at present, for various reasons, was discouraged. It will not be without interest to add that in the *Morning Post* of October 14th M. Henry Bérenger, secretary to the Senatorial Army Committee, gave an interesting account of the foundation and growth of the boys' clubs for preliminary military training. They were first established in France in 1880, but it was not until fifteen years later that they were put on a satisfactory footing. By 1900 there were about eight hundred clubs with 32,000 members. The boys were instructed in gymnastics, jumping, running, putting the weight, Swedish drill, and, later, elementary boxing and fencing. They were also trained in the use of the rifle and in shooting. A few of the clubs (about eighty) were riding clubs and trained for the cavalry, and there were a few air clubs. When the war broke out over half a million men had passed through these clubs. They have done very well, and have furnished many non-commissioned officers. All the clubs were broken up by the war, but the principle was revived by General Galliéni; the preliminary training of the classes of 1915, 1916, 1917, and 1918 has been entirely carried out by the clubs, and artillery clubs have now been added. The Senate has passed a bill to make preliminary military training obligatory for French boys, but it has not yet come before the Chamber of Deputies. At first most of the boys were drawn from the working classes, but since the war began middle class boys have also joined clubs which have undertaken military training in clubs and colleges.

NELSON'S EGERIA AND THE "TEMPLE OF HEALTH."

OCTOBER 21ST, the anniversary of Trafalgar, reminds us of the death of Nelson, and the name of Nelson inevitably recalls that of his Egeria, Lady Hamilton. The career of this extraordinary woman who, born in the gutter, became the wife of a British Ambassador, the friend and confidante of a queen, a leader of society in Naples, and the mistress of our great naval hero, does not concern us here. What interests us is her association with James Graham, one of the vilest impostors in the history of quackery. In her early life she is said to have been the High Priestess of the Temple of Health on the Royal Terrace, Adelphi, where Graham lectured on generation and sold "aetherial" and "balsamic" nostrums. Emma Lyon, as she then called herself, may not have actually played the part of "the rosy athletic and truly gigantic Goddess of Health and Hymen" who posed on the "celestial throne" in that shrine of indecency, but it is pretty certain that she was employed in some doubtful capacity by its hierophant. James Graham was born at Edinburgh in 1745, and studied medicine there under Monro *primus*, Cullen and Black, but it is uncertain whether he took a degree. He practised for some time in Philadelphia, where he learnt enough about Franklin's discoveries in electricity to put them to profitable use on his return to Europe. In his temple he used every device to excite the faith of his devotees. The entrance hall was adorned with crutches and other discarded adjuncts of past invalidism. Seekers after health were welcomed by sweet airs from a concealed band which were wafted to their ears through small openings in the steps of the stairs, while heady perfumes breathed around them. The lectures were delivered in the "Great Apollo apartment," which was decorated with festoons, gilt and silver ornaments and mirrors reflecting innumerable lights. They were always introduced by music, and at the end those present received electric shocks from conductors hidden underneath the covers of the seats. When they were thus worked up to the highest pitch of credulity, a gigantic spectre rose through the floor and handed them bottles containing the "aetherial balsam." The "service," as it might be called, was brought to a close with song by a beautiful woman representing the Goddess of Music. Finally, sufferers from various affections were treated by electricity. One of the greatest attractions of the Temple of Health was a "celestial or magnetico-electrical bed," in which couples desirous of offspring were, for the "compliment of a £50 banknote, permitted to partake of the heavenly joys it affords by causing immediate conception, accompanied with soft music." Graham's lecture "On the generation, increase, and improvement of the human species" is a mixture of quackery and obscenity, naked and unashamed, seasoned with blasphemy. It is only fair to him, however, to say that at a time when personal cleanliness was much neglected he insisted on this as a condition of health. He also anticipated modern teaching as to fresh air, and urged people to sleep with their bedroom windows wide open. "This," he says, "is my own invariable custom, summer and winter, even in the wettest, coldest, and stormiest weather; and I never, never have a cold, low spirits, or any indisposition whatever." He preached temperance at a time when heavy feeding and drunkenness were almost universal, even in what was called polite society. His career in London came to an inglorious end in 1782. Towards the end of his life he turned to religion, passing through that phase to insanity. He died suddenly at Edinburgh in 1794, at an age more than a century short of the "hundred and fifty stout, healthy, and happy years" which, with the help of his "rejuvenating medicine," he expected to live.

JEREMY BENTHAM'S "AUTO-ICON."

THE wishes expressed by Sir Victor Horsley in regard to the disposal of his remains will recall to many old University College men the will of the utilitarian philosopher, Jeremy Bentham, by which he directed that his body should be used for dissection. He entrusted to Dr. Southwood Smith, in conjunction with two other friends, the execution of this disposition. It was the fulfilment of a long cherished intention, for in 1769 he had made a will leaving his body to his friend Fordyce for the same purpose. In that document he explained the reason for his action as follows: "This my will and special request I make not out of affectation of singularity, but to the

intent and with the desire that mankind may reap some small benefit by my decease, having hitherto had small opportunities to contribute thereto while living."[1] He died in 1832, at the age of 85, and by a memorandum affixed to the document two months before his death he deliberately confirmed the wish expressed when he was 21. In making this disposal of his body Bentham was inspired by the philanthropic wish to lessen the popular prejudice against dissection. At the time of his death the Anatomy Act had not yet been passed, and the crimes of Burke and Hare were fresh in the memory of the public. Dr. Southwood Smith delivered an oration over the body in the Webb Street School of Anatomy on the evening of June 9th, 1832. One who was present thus described the occasion: "None who were present can ever forget that impressive scene. The room is small and circular, with no windows but a central skylight, and was filled, with the exception of a class of medical students and some eminent members of that profession, by friends, disciples, and admirers of the deceased philosopher, comprising many men celebrated for literary talent, scientific research, and political activity. The corpse was on the table in the centre of the room, directly under the light, clothed in a nightdress, with only the head and hands exposed. There was no rigidity in the features, but an expression of placid dignity and benevolence. This was at times rendered almost vital by the reflection of the lightning playing over them; for a storm arose just as the lecturer commenced, and the profound silence in which he was listened to was broken, and only broken by loud peals of thunder which continued to roll at intervals throughout the delivery of his most appropriate and often affecting address." Among Bentham's unpublished works is a fragment, now in the British Museum, entitled *Auto-Icon or the Uses of the Dead to the Living;* the materials were arranged in December, 1831, but he added passages as late as May, 1832. The object of this curious essay is to show how, if embalmed, every man might be his own statue. Bentham says: "If a country gentleman have rows of trees leading to his dwelling, the auto-icons of his family might alternate with the trees; copal varnish would protect the face from the effects of rain—caoutchouc the habiliments." We do not know whether those who had charge of Bentham's remains found inspiration in this suggestion. At any rate his auto-icon in the form of his skeleton dressed in his habit as he lived is preserved in the Museum of University College.

THE DELINEATION OF INTERNAL ORGANS.

MUCH general interest has been manifested in the account already published in the BRITISH MEDICAL JOURNAL (September 30th, p. 459) of Dr., now Captain, J. Shearer's work in connexion with the delineation, by electrical methods, of certain organs of the human body. The medical profession will, we are sure, warmly appreciate the statement which we are authorized to make that Captain Shearer has been afforded by the military authorities greatly increased facilities for the prosecution of his work, and that a physicist of high repute, as well as certain clinical medical officers, are now definitely associated with him in his investigations. We hope to publish next week, or in an early issue, a full account of the results which have been obtained up to date.

THE Acting Registrar of the General Medical Council is informed that an Order of the Privy Council, postponing the elections of Direct Representatives, which would otherwise fall to be held before the end of the year, may be expected in a few days.

[1] *Dr. Southwood Smith: A Retrospect.* By his granddaughter, Mrs. C. L. Lowes. Edinburgh and London: William Blackwood and Sons. MDCCCXCVIII.

Medical Notes in Parliament.

War.

Pensions and Allowances: Discharged Disabled Soldiers.

THE Prime Minister stated on October 17th that the Committee of the Cabinet recently appointed to consider all questions of pensions and allowances had reported and he hoped to make an early statement.

On the same day Lord H. Cavendish-Bentinck asked a question, of which he had given private notice, as to the present practice of discharging soldiers before everything had been done that medical and surgical science could do for them, a practice which entailed great hardship on the discharged soldier; whether the army authorities would assume responsibility in future for the duty of restoring the soldier to health as far as possible; and whether, in the event of the army authorities being unable to undertake this duty, the Statutory Pensions Committee, or some other body, would be equipped with an adequate and competent staff for the purpose. Mr. Forster said that he was not prepared to make any detailed reply, but could say that the matter had received, and was receiving, sympathetic attention. In reply to a question by Mr. Percy Harris (Paddington) on the same day, Mr. Hayes Fisher said: "The agreement with reference to the treatment of disabled men after they are discharged from the service is, of course, subject to the necessary funds being provided, and in the supplementary answer that I gave to the hon. member for Stockport on October 10th I stated that the scheme had yet to receive the assent of the Treasury. The scheme covers England, Scotland, and Wales. Other arrangements are in progress with regard to Ireland. Before the scope of the scheme can be settled or its operation commenced the decision of the War Office as to the extent of the use of military hospitals must be ascertained and the full co-operation of the department and of the Admiralty must be secured."

The Financial Secretary to the War Office has stated that men supplied with artificial limbs had not to pay anything towards their improvement, and that the repair of limbs, damaged through no fault of the soldier, was paid for by the State. It was true that some men paid for a limb of higher finish than that supplied by the department, but a more expensive limb was not necessarily better. There was no substantial improvement for the extra expense. The department had endeavoured to get more expensive limbs supplied at lower prices. The limbs supplied to officers were superior only in the matter of finish.

The Financial Secretary to the War Office has stated that he will consider the question whether hospital authorities should be required to notify local pension committees as to soldiers discharged, so that their addresses can be known, but is reluctant to throw any additional work on the hospital authorities.

British Prisoners of War.

In reply to questions addressed to the Under Secretary of State for Foreign Affairs on October 11th, Mr. J. Hope, Treasurer of the Household, said that complete information as to the whereabouts of all British prisoners captured in Mesopotamia had not yet been received. The United States Embassy had been requested to press the Turkish Government to supply the full list of the British prisoners of war in Turkey at the earliest possible date. In reply to another question, the Financial Secretary to the War Office said that 537 British officers and 11,641 of other ranks were now estimated to be prisoners in the hands of the Turks; 439 Turkish officers and 9,751 of other ranks had been captured by British forces. Negotiations were in progress for the exchange of those incapacitated for further service.

The German Government, Mr. Hope stated, had not yet permitted the inspection of camps containing British prisoners of war working in Russian territory; the only report in the possession of the British Government was one by Captain Draudt, of the Prussian Ministry of War. It was not in accordance with the information received privately, and the British Government could not be satisfied except by an independent neutral report, for which it gave facilities in the case of British camps. The latest

reports from the United States Embassy at Berlin showed some improvement in the treatment of British prisoners of war in Germany. Mr. Forster stated on October 17th that the number of German prisoner camps in Great Britain and Ireland was 42, including working camps. The number of camps for British prisoners of war in Germany could not be stated, as it was constantly varying, and no camp was exclusively reserved for British prisoners. Mr. Hope stated on October 12th that no definite reply had been received to the last proposal, dated September 19th, for the exchange of prisoners over 45 years of age either from the German or Austro-Hungarian Government. [It has since been announced that 600 British prisoners over 45 years of age interned at Ruhleben are to be sent home.] The Danish Government, as announced in the House on August 10th, had offered to receive invalid British prisoners of war, and had been thanked for its generous offer; it was understood, however, that ample accommodation was still available in Switzerland, the only difficulty encountered in the arrangements in force being that of inducing the German Government to transfer all the British officers and men entitled to the privilege. In these circumstances it was felt that it would be premature to extend the arrangement to other neutral countries, but should the accommodation in Switzerland prove insufficient the kind offer of the Danish Government would be reconsidered. An agreement had been arrived at with the Bulgarian Government for the exchange of incapacitated prisoners of war. The Under Secretary of State for Foreign Affairs said that as any question affecting the release from detention of any belligerent subject had a bearing on our military position and must be determined by military conditions, questions dealing with the exchange and repatriation or internment in neutral countries of prisoners of war, civilian or military, would in future be answered by the Secretary of State for War.

Mr. Forster stated that the number of German prisoners of war in British hands was, according to the latest return:

Military officers	729
Other ranks	36,165
Naval officers	150
Other ranks	1,976

The approximate net number of British prisoners of war now interned in Germany was:

Military officers	923
Other ranks	28,770
Naval officers	47
Other ranks	361

Mesopotamia.—The Secretary of State for War stated on October 17th that the force in Mesopotamia had been supplied with all the dentists and dental mechanics for which it had asked, and the Army Council had been quite recently informed by cable that no more were required. The Financial Secretary to the War Office has stated that the total number of prisoners at Kut who had been accounted for was about 2,850 of all ranks; this total included natives of India, and also those reported as exchanged or dead. Those traced were distributed over some sixteen places. Though information was scanty, it was believed that those in the camps were fairly well treated. In reply to a question on October 17th, Major Astor was informed that the deficiencies in the equipment of certain military hospitals in Madras had been of a temporary character, and had now been repaired.

Milk, Meat, and Bread.

On October 17th a debate on food prices was raised in the House of Commons on the second reading of the Consolidated Fund (No. 5) Bill. Special attention was directed to the question of the supply and price of milk by Mr. Barnes and Mr. Anderson (Labour members), and by Captain Bathurst and Mr. G. Lambert (representatives of agricultural districts).

In his reply, the President of the Board of Trade said that the chief reasons for the price of food going up were the restriction of production, the narrowing of markets, the difficulties of carriage, the inflation of the currency, and an increase in the consuming capacity of the people, which in a great many districts had been large. The Departmental Committee had realized, as the Board of Trade had realized, that it was exceedingly difficult to regulate the price of food. The accusation against farmers of turning milk into cheese was not altogether well founded; the percentage increase in the price of milk since the outbreak of the war was 39, and in the case of cheese 52. If it were shown that any farmer was withholding cheese from the market the Board of Trade would not hesitate to order a prosecution, but it might be that Cheshire farmers in transferring some of their milk to make cheese were really doing good for the community. The production of milk must be made remunerative to the farmer. When cows ran dry farmers might decide to sell them for beef, and he regretted that it was true that some dairy farmers had already reduced their milking herds. This was a grave danger for the children of the country, but in following this course the motive of the farmers was not only the desire for profit, but the difficulty of getting milkers. The War Office had made arrangements which, it was hoped, would ensure to the farmers the men necessary for the production of milk. He agreed that it ought to be made an offence wilfully to destroy milk, but he was not prepared to accept at once the proposal to fix a price for milk; persons engaged in the milk trade should realize, however, that the Government had its eye on them. With regard to meat, a great deal had been done to prevent undue slaughtering, and there were more live animals in the country to-day than at the beginning of the war. The question of providing more refrigerating tonnage had been under consideration for the last twelve months, and some of the difficulties attending the financial adjustments had already been overcome. It was obvious that where there was much less meat to be sold the working charges per lb. must be higher, and that was one of the main explanations of the increase in the retail price of meat. The total purchases of meat made by the Government amounted to sixty million pounds sterling, and this country was supplying not only its own forces, but the Italian and French armies also. The profits of the merchants were strictly limited and the unnecessary middleman had been eliminated, so that the meat was handed over to the merchant under very rigid conditions and should go out to the retail traders without further profits being made. Sugar was cheaper in this country than in America. With regard to wheat, the Government had begun secret purchase in October, 1914, and before the secret leaked out three million quarters of wheat and large quantities of flour had been handled, so that the margin was kept up right through 1915. The whole of the firms engaged in the Indian wheat trade were turned into Government agents and paid a commission; in this way two and a half million quarters of wheat were brought from India. He hoped that the efficiency of the Wheat Commission would go on increasing as it gained experience. It was a mistake to ascribe the great rise of foodstuffs to the increase in freights. The increase in the price of meat was from 4d. to 5d., of which three-eighths of a penny represented the increase in freights; American bacon was 8d. to 9d. a lb. higher, but the freight was only ½d. higher; Canadian cheese was 4d. to 5d. a lb. higher, but the freight was only ½d. higher. It had to be remembered that the actual loss by enemy action and by marine risks since the war began came to pretty nearly three million tons dead weight, and the Allies had suffered in the same way. The rationing of Germany and Austria had been a vast undertaking and had led to an enormous number of evils, and if applied in this country those who would suffer first were persons with fixed incomes, fixed occupations, and fixed residences. The policy of the Government was to provide plenty of food and to see that it was brought here under conditions which would allow no one to exploit it or become unduly rich at the expense of the consumer.

On October 12th, in reply to Mr. Barnes, Mr. Runciman said that with a view to enabling dairy farmers to meet the strain of work during the winter, the further calling up of their men for military service had been deferred, and it was expected that they would respond by offering their milk on terms which would not involve any further rise in retail prices. Subsequently Mr. Acland stated that no more men from among those now employed in agriculture would be called to the colours until January 1st, 1917, and no more men whose whole-time employment on a holding was necessary for maintaining milk production until April 1st, 1917. The military authorities had, however, strongly impressed on the Board that army requirements necessitated the power of revision during January next as regards ordinary farming and during April as regards dairy farmers.

The Vote of Credit.—In the debate which followed the great speech by the Prime Minister on October 11th in moving the fourth vote of credit for the service of the financial year—a vote for £300,000,000, raising the total for the year to £1,350,000,000—an attack was made upon the Quartermaster-General's department, with special reference to the purchase of supplies and the army clothing department. In his reply the War Minister said that he hoped within a very short time to tell the House that the army clothing department had been placed upon a footing which would be satisfactory to every business man. [It was announced on October 7th, that Lord Rothermere, formerly Sir Harold Harmsworth, had been appointed Director-General of the Royal Army Clothing Department, and had assumed control under the Quartermaster-General.] The department of the Quartermaster-General had had to improvise, Mr. Lloyd George said, largely upon a very narrow foundation, a huge enterprise. Any department under such conditions would be liable to make some mistakes; at the same time he thought it would be admitted that never in any war had the army been better fed, better clothed, or better looked after. Since the Quartermaster-General had taken over the administration of affairs in Mesopotamia there had been considerable improvement, largely due to the energy and impetus which he had given to the organization there. Later in the debate Mr Lloyd George said the War Office was considering very carefully the best method of reorganizing the Volunteer Training Corps. The scheme, which would be completed very shortly, would not only redress all the obvious grievances, but would give the whole country a sense of satisfaction, strength, and confidence.

Petrol Supply.—Sir J. Spear asked whether there was any prospect that the Board of Trade would shortly be able to secure a larger supply of petrol for public use. Mr. Runciman said that he was advised by the Petrol Control Committee that if the present rate of importation of motor spirit into this country was maintained, the supply would probably be sufficient to meet requirements for the war and other essential needs. In reply to other questions, he said that the number of communications received by the Petrol Control Committee up to date was approximately three-quarters of a million. The committee had issued 292,250 licences for the quarter ending October 30th. The amount of licence duty received was £116,900. As the staff became accustomed to the work the task of responding to all communications was being more expeditiously discharged.

Cocaine.—In reply to questions by Mr. Hogge on October 11th, the Home Secretary said that the exemption which allowed unregistered dental practitioners to purchase solutions containing 0.1 per cent. or more of cocaine had been extended to October 31st, but he was satisfied that there was no need to extend the exemption beyond that date, as other efficient local anaesthetics would be available in sufficient quantities. He was advised that it was in no way necessary to apply the restriction to registered dentists, because all of them were known from the very fact of registration, but any person could call himself an unregistered dentist and could obtain a supply of cocaine if the restriction were not in force. Mr. Hogge asked whether a large number of the 1,600 registered dentists were not qualified, but got on the *Register* when legislative provisions were made with regard to registration. Mr. Samuel replied, "they have a recognized status."

Chlorine Gas.—Mr. Chancellor is exercised because he thinks that the expenditure on certain experiments on chlorine gas made for the Medical Research Committee should be investigated by the Auditor-General. Mr. Roberts pointed out that the expenditure of the committee was made from moneys provided by Parliament under Subsection (2) (*b*) of Section 16 of the National Insurance Act, and that the accounts came before the Controller and Auditor-General, who would make such observations as he thought fit upon them to the Public Accounts Committee in due course.

AT the monthly meeting of the Central Midwives Board, on October 5th, a letter was read from Lord Knutsford respecting the desire of the London Hospital to be allowed to modify Rule C 1 (1) (*c*). The request was that, instead of the obstetric physician delivering the prescribed twenty lectures, the rule should be held to be complied with if he gave fifteen and the senior resident accoucheur thirteen. The Board, last July, declined to accede to the suggestion and now decided to inform Lord Knutsford that it was unable to alter its decision. Five applications were granted under Rule B 1 (*a*), whereby candidates wishing to enter for examination may furnish a statutory declaration in lieu of a baptismal or birth certificate. The Sassoon Maternity Hospital, Poona, was approved as a training school.

THE WAR.

MESOPOTAMIA DISPATCH.

JANUARY 19TH TO APRIL 30th, 1916.

THE dispatch of Lieutenant-General Sir Percy Lake, commanding the Indian Expeditionary Force in Mesopotamia, from the time when he assumed command on January 19th, 1916, to April 30th, was issued as a supplement to the *London Gazette* on October 10th. It relates the unsuccessful attempts to relieve Kut.

The period is divided into three phases: the first, from January 19th to 23rd, concerns the unsuccessful attempt to force the Hannah defile by the force under the command of Lieutenant-General Sir F. Aylmer; the second, from January 24th to March 10th, a period of rest and reorganization, followed by an unsuccessful attempt to outflank the enemy's right in the vicinity of the Dujailah Redoubt, commander Sir F. Aylmer; the third, from March 11th to April 30th, including a brief period of preparation, followed by the attack and capture of the Hannah and Falahiyah positions; failure to force the Sannaiyat position, and the fall of Kut; the commander of these operations was Lieutenant-General Sir G. F. Gorringe.

The Turkish position at Sheikh Hassan had been carried after severe fighting on January 6th, 7th, and 8th, and after an action on January 13th and 14th on the Wadi river the enemy had retreated to the Hannah position. The general position on the Tigris front on January 19th was that the bulk of General Aylmer's force was encamped on the left bank of the Tigris above the Wadi river, and the advanced troops were in touch with the Turks entrenched at the Hannah position. General Aylmer was actively engaged in reorganizing his force for a further advance with the least possible delay.

Sir Percy Lake makes the following general observations on the condition of things at that time:

"The difficulty experienced in pushing up reinforcements, supplies and munitions of war to the front seriously affected the operations.

"The number of steamers available in January, 1916, for river transport purposes was practically the same as when in June, 1915, the first advance up the Tigris took place. Additional river craft had from time to time been demanded, as augmentations to the force in Mesopotamia were decided upon, but owing to the peculiar conditions which vessels intended for the intricate navigation of the Tigris have to satisfy, the provision of these vessels was a difficult problem, necessarily entailing long delays, and the supply was never able to keep pace with the requirements of the force.

"In consequence of this it was never possible during the period now under report either to concentrate at the Tigris front the whole of the forces available in the country or to equip such forces as could be concentrated there with sufficient transport to make them mobile and enable them to operate freely at any distance from the river.

"It was always necessary, therefore, for General Head Quarters to balance most carefully the flow of reinforcements and supplies, so that the former should not outrun the latter."

Phase 1.

During the first phase, from January 19th to January 23rd, the weather was extraordinarily unfavourable. Heavy rains from the river in flood converted the ground on every side into a bog; the bridge across the Wadi was washed away several times, and the boisterous winds greatly interfered with the construction of a bridge across the Tigris, here some 400 yards wide. It was necessary to ferry artillery to the right bank. On January 20th the enemy's position at Hannah, on the left bank, was bombarded, and during that day and the following night the infantry pushed forward to within 200 yards of the enemy trenches. The attack next morning failed, though it got within 100 yards of the enemy's lines. Heavy rain began to fall, and continued throughout the day, so that when the attack was renewed at 1 p.m. the ground was a sea of mud, rendering rapid movement impossible. This attack also failed under the heavy and effective fire of the enemy, which inflicted severe losses. The troops maintained their position until

dark, and then withdrew to the main trenches which they previously occupied, 1,300 yards from those of the enemy.

"As far as possible all the wounded were brought in during the withdrawal, but their sufferings and hardships were acute under the existing climatic conditions, when vehicles and stretcher-bearers could scarcely move in the deep mud."

The losses on this day were heavy, the ground was a quagmire, and the troops exhausted. On January 22nd an armistice of six hours was arranged in order to bury the dead and remove the wounded to shelter. Sir Percy Lake expresses his admiration of the courage and dogged determination of the force, which for days bivouacked in driving rain on soaked and sodden ground. "Three times they were called upon to advance over perfectly flat country, deep in mud, absolutely devoid of cover upon well-constructed and well-planned trenches, manned by a brave and stubborn enemy approximately equal in numbers. They showed a spirit of endurance and self-sacrifice of which their country may well be proud." General Townshend reported from Kut on January 25th that as regards food supplies he could hold out for another eighty-four days, that is to say, until April 21st.

Phase 2.

The remainder of January and the whole of February were occupied in preparations for resuming the offensive. The force had been obliged to commence its advance with temporary brigades, divisions, etc., for divisions and brigades, the units of which knew each other, had been broken up to meet the difficulties of transport on the long sea voyage, and there had been no time after arrival in Mesopotamia to await belated units, and in many cases field ambulances arrived after the combatant units. Formations were reconstructed and reinforcements were pushed up from the base by steamer and route march, and organization and training were carried on at the front. On the left bank, at the end of February, the enemy, who had been reinforced, held the Hannah position. It was decided to attack on the right bank as a first step towards the relief of Kut before the flood season, expected about the middle of March, when it was feared the Turks would cut the bunds and so flood the country, the whole area of which was so flat that there was hardly any portion which could safely be said to be above flood level. It was decided not to wait for further reinforcements, but to advance with the maximum force for which land transport could be made available, with two days' food and water, against the Es Sinn position, which rested on the Dujailah Redoubt. Adverse weather conditions at the beginning of March arrested any movement until March 7th. Two columns under Generals Kemball and Keary were formed and by a night march reached a position on the enemy's right flank, apparently undiscovered. Keary's column was in position at daybreak on March 8th to support Kemball's attack, but the latter did not reach the selected point until more than an hour late, and three hours' delay then occurred. When the advance was made it was held up by concealed trenches 500 yards from the Redoubt; at this time the engineer officers reported that the water supply contained in rainwater pools was insufficient and could not be increased by digging. A further assault was then made on the Redoubt, but failed. The troops had now been under arms for some thirty hours, and the enemy's position next morning being unchanged General Aylmer, finding himself faced with a deficiency of water, decided upon the immediate withdrawal of his forces to Wadi, which was reached the same night.

Of the manner in which the wounded were evacuated Sir Percy Lake writes: "The evacuation of our wounded had preceded our retirement. The first parties of wounded reached Wadi at 4 p.m. on March 9th, and the last wounded man was attended to in hospital at that place at 2 a.m., March 10th. The Corps Commander speaks in high terms of the gallantry and devotion displayed by officers and subordinates of the Medical Service and Army Bearer Corps during the fighting. They collected and attended to the wounded under heavy fire in a manner which called forth the admiration of the whole force."

Phase 3.

On March 15th the Tigris came down in heavy flood, and for the remainder of the month there was a strenuous struggle with the inundations to prevent the whole country being flooded. As it was ascertained that the Turks were in a position to flood the right bank, it was resolved to make an attempt to advance up the left bank and to attack the Hannah, Falahiyah, and Sannaiyat positions. The attack on the Hannah position on April 5th by the 13th Division was successful, as was also an attack on the Abu Roman mounds on the right bank by the 3rd Division. During the evening the Falahiyah position was carried by the 13th Division, which suffered some 1,300 casualties during the day. An attack by the 7th Division on the Sannaiyat position on the morning of April 6th failed. During the night of April 5th and throughout the 6th the river rose steadily, the wind changed to the north, and the positions were flooded. An attack made by the 13th Division on the Sannaiyat position on the night of April 8th failed. It was then decided, having in view the urgency of reaching Kut if possible, to attempt to force the enemy's right. This involved establishing communications across flooded areas, where there was no such thing as a road and no material for making a road. In spite of the most difficult conditions, and often with a shortage of rations which the transport was heavily strained to bring forward, the troops under the command of Major-General Keary made steady and consistent progress until checked by a counter attack, in which the enemy suffered heavy losses. Another attack on April 20th and 21st on the Sannaiyat position after a preliminary success was driven back. "By mutual consent parties went out, under the Red Cross and Red Crescent flags, to collect their respective wounded. The Turkish casualties appear to have been very heavy, as they were evacuating wounded until nightfall. Our casualties amounted to about 1,300."

Persistent and repeated attempts on both banks had thus failed, and it was known that at the outside not more than six days' supply remained to the Kut garrison. The troops were nearly worn out, and had "for eighteen consecutive days done all that man could do to overcome, not only the enemy, but also exceptional climatic and physical obstacles—and this on a scale of rations which was far from being sufficient in view of the exertions they had undergone, but which a shortage of river transport had made it impossible to augment. The need for rest was imperative."

The dispatch, after relating the failure of the gallant attempt of the *Julnar* to get up to Kut with supplies on the night of April 24th, states that "with the failure of the *Julnar* there was no further hope of extending the food limit of the garrison of Kut. Everything that was possible with the means to hand had been attempted. The troops only desisted from their efforts when, through battle losses, sickness, and exhaustion, the limit of human endurance had been reached. On April 29th Kut surrendered."

On April 30th and following days, by arrangement with the Turkish Commander-in-Chief, all the more serious among sick and wounded of the garrison of Kut were handed over in exchange for an equivalent number of Turkish prisoners.

The concluding paragraphs of the dispatch contain the following tribute to the work of the medical service:

"The energy and devotion to duty shown by the personnel of the medical services deserve commendation. Overworked and undermanned as they were during the advance in January—for the greater portion of the medical organizations then in the country had been shut up in Kut, and the medical units of the 3rd and 7th Divisions had only begun to arrive—they did their utmost with the means at their disposal to alleviate the sufferings of the sick and wounded. With the arrival in February of the first river hospital ship *Sikkim*, and a steady increase in personnel, their power of dealing with the situation was considerably improved, as the action on March 8th showed.

"No report on the medical services would be complete without reference to the splendid services rendered by Mr. T. A. Chalmers, of Assam, who brought out, and himself drove, his specially designed motor boat *Ariel*. He spent his whole time, frequently under fire, in conveying sick and wounded between collecting stations, field ambulances, and river hospital craft in a manner which no other boat in our possession could have imitated."

The Financial Secretary to the War Office stated in the House of Commons on October 11th that since the end of July,

when the War Office took over control, there had been a large increase in the river transport available in Mesopotamia. The increase was already 64 per cent. and would shortly be 100 per cent. The whole system had been reorganized, and there was ample transport available to take up promptly all the medical stores required.

CASUALTIES IN THE MEDICAL SERVICES.

ARMY.

Killed in Action.

CAPTAIN T. L. INGRAM, R.A.M.C.

Captain Thomas Lewis Ingram, R.A.M.C., attached to the Shropshire Light Infantry, who was returned as missing about a month ago (BRITISH MEDICAL JOURNAL, September 30th), was killed on or about the night of September 16th while searching for wounded in front of the enemy wires. He was born in 1875, the eldest son of Mr. Thomas Lewis Ingram, barrister, of the Middle Temple, and educated at Cambridge, where he graduated M.A., and at the London Hospital. He took the diplomas of M.R.C.S. and L.R.C.P.Lond. in 1903. After filling the posts of house-physician and assistant house-surgeon at the Poplar Hospital, and senior house-surgeon at the Westminster Hospital, he went into practice at Welford, near Rugby, where he was medical officer of the fifth district of the Lutterworth Union, and of the Welford district of the Market Harborough Union. He served with the Middlesex Yeomanry in the South African war, gaining the medal with three clasps. He took a temporary commission as lieutenant in the R.A.M.C. on September 14th, 1914, was promoted to captain on completion of one year's service, received the Military Cross on September 6th, 1915, and the D.S.O. on May 31st, 1916.

CAPTAIN A. W. VENABLES, R.A.M.C.

Captain Aubrey William Venables, R.A.M.C., has been reported as killed in action early in October. He was educated at St. Mary's Hospital, London, and, after taking the diplomas of M.R.C.S. and L.R.C.P.Lond. in 1913, filled the posts of house-surgeon and house-physician at that hospital. He took a temporary commission as lieutenant in the R.A.M.C. on September 1st, 1914, and was promoted to captain on completion of a year's service.

Died of Wounds.

LIEUTENANT W. S. LACEY, R.A.M.C.

Lieutenant William Stocks Lacey, R.A.M.C., died of wounds on October 11th. He was the only son of Mr. William J. M. Lacey, L.D.S.R.C.S., of Hertford, and was educated at Guy's Hospital. He took the L.D.S. R.C.S. in 1908, the M.R.C.S. and L.R.C.P.Lond. in 1912, and the dental degree D.M.D., of Harvard University in 1913. He was in practice with his father at Hertford, and received his commission as temporary lieutenant on January 3rd, 1916.

Wounded.

Captain A. A. Atkinson, R.A.M.C.(S.R.)
Captain F. L. P. G. Bennett, R.A.M.C.(S.R.).
Captain H. B. German, R.A.M.C. (temporary).
Captain W. L. Hutton, Canadian A.M.C.
Captain W. R. Pagan, R.A.M.C. (temporary).
Captain P. Poisson, Canadian A.M.C.
Captain J. C. Pyper, R.A.M.C.(S.R.).
Captain R. J. Rogers, R.A.M.C. (temporary).
Captain L. B. Stott, R.A.M.C.(T.F.).
Lieutenant R. N. Craig, R.A.M.C. (temporary).
Lieutenant H. F. Johns, R.A.M.C. (temporary).
Lieutenant G. J. McGorty, R.A.M.C. (temporary).
Lieutenant E. E. T. Nuthall, R.A.M.C. (temporary).
Lieutenant A. J. R. Taylor, R.A.M.C. (temporary).

DEATHS AMONG SONS OF MEDICAL MEN.

Addison, Geoffrey, Canadian Expeditionary Force, elder son of Dr. W. B. Addison, Isles of Scilly, killed September 26th, aged 22.

Bell, David Hunter, Lieutenant (acting Captain) Canadian Scottish, second son of Dr. John William Bell of Edinburgh, was killed in action on October 8th. He was educated at George Watson's College, Edinburgh, and before the war was engaged in the Vancouver branch of the Canadian Bank of Commerce.

Browning-Paterson, N. A., Captain R.F.C. (erroneously ranked as lieutenant in the official announcement), younger son of Dr. A. Browning Paterson, of Uxbridge Road, W., aged 22, who was reported missing on July 21st last, is now officially reported as killed in aerial action while leading a patrol well over the German lines. He accompanied the first Expeditionary Force in August, 1914, as second lieutenant, R.A., taking part in the retreat from Mons and subsequent battles, and was mentioned in dispatches by Viscount French. He was transferred in France to the R.F.C. as observer in September, 1915, and was gazetted flight commander on July 3rd.

Davison, Robert, Lieutenant King's Liverpool Regiment, only son of Dr. J. H. Davison of Belfast, killed recently, aged 20. He was educated at Coleraine Academy, enlisted in the Royal Irish Rifles at the beginning of the war, got a commission on November 27th, 1914, and had been at the front for sixteen months.

Hair, Donald Campbell, Second Lieutenant King's Own Shropshire Light Infantry, son of Dr. Hair of Leamington, killed October 3rd.

Hall, Norman de Havilland, Second Lieutenant Suffolk Regiment, younger son of Dr. de Havilland Hall of Wimpole Street, died on October 7th of wounds received on October 3rd, aged 28.

Hardwick, Gerald Leslie, Trooper Canadian Cavalry, third son of Dr. Hardwick of Charing, Kent, killed on September 26th, aged 28.

Speer, Alfred Henry Templeman Loraine, Lieutenant Royal Field Artillery, attached Royal Flying Corps, elder son of Dr. Speer, of The Priory, Great Malvern, and of Powyscourt, Belcombe, Sussex, reported missing on July 9th, now known to have been killed on that date, aged 22. He was educated at Malvern, where he was in the O.T.C., and at Trinity College, Cambridge; enlisted in the Public Schools Battalion at the beginning of the war, got a commission in a London Territorial battalion of the R.F.A. on September 24th, 1914, and joined the Royal Flying Corps in January, 1916. He was at the front from March last till July, when his aeroplane was shot down by the enemy and he and his observer were killed. His commanding officer reported that "he was a gallant soldier, a fine flyer, and a most fearless fighter."

Spreat, Leicester Hulke, Second Lieutenant Royal Horse Artillery, youngest son of Mr. F. A. Spreat, F.R.C.S., of Oakleigh Park, Whetstone, Middlesex, died in the London Casualty Clearing Station on October 8th of wounds received on the previous day, aged 19.

Stewart, James Aitchison, Lieutenant Royal Flying Corps, who died in hospital at Havre of wounds received on October 7th, aged 26, was the elder son of Dr. Robert Stewart of Edinburgh. He was educated at Edinburgh Academy and Edinburgh University. For three years he held a commission in the 7th Royal Scots, which he resigned in May, 1914. On the outbreak of war he received a commission in the King's Own Scottish Borderers, but was subsequently invalided home from the front with rheumatism; later he was transferred to the Royal Flying Corps.

Medical Student.

Brew, Cyril Huleatt, Lieutenant Irish Guards, aged 22, the youngest son of Dr. Brew, of Chew Magna, died at Rouen on October 12th from wounds received on September 15th. He was educated at St. Winifred's, Kenley, and Bradfield College, Berks. When the war broke out he was a third-year medical student at University College and had passed the second M.B. examination at the University of London. He joined the Public Schools Corps in September, 1914, and received a commission in the 14th battalion of the Sherwood Foresters in the following November, being transferred to the Irish Guards in May, 1915, and served with the second battalion. He went to France in September, 1915, and was promoted to lieutenant in November, 1915.

England and Wales.

WAR WORK AT THE MANCHESTER UNIVERSITY.

ANNOUNCEMENTS of the work of the coming session at the Manchester University show that a considerable amount of work is being undertaken specially with a view to war conditions. A special staff under Professor Dixon is to be engaged in the testing of high explosives made in the Manchester area, and another special staff under Professor Lapworth will be engaged in testing coal-tar products. Evening classes, too, are contemplated for workpeople in metallurgy, and public lectures are to be given on Monday evenings on war problems. The laboratory of the Physics Department will give a large space to the Admiralty branch of investigation and research, while the workshops and laboratory of the Engineering Department will be mainly taken up with Government work, especially with aeronautical research and experiments, and the testing of various inventions. It is expected that there will be further increase in the number of woman medical students. During the past year the war work of the women students has included service in hospitals, while in the vacation over forty were engaged on farms, and the volunteer ambulance detachments have met several hundred hospital trains. The Officers Training Corps

is also very active, and the cadets are now required to give ten hours weekly to military training. Considering the great depletion of teaching staff and students, the university is showing most commendable activity in its war service.

LIVERPOOL MEDICAL INSTITUTION.

At the opening of the session of the Medical Institution on October 12th the new President (Dr. Charles J. Macalister) delivered an inaugural address, but before doing so mentioned the names of Dr. Francis W. Bailey and Dr. M. J. Mahony, who have received the D.S.O., and Dr. S. W. McLellan and Dr. G. Macleod, to whom the M.C. has been awarded. These medical men are members of the Medical Institution, and those present warmly approved of the congratulations the President, in their name, bestowed upon the recipients. The subject of the address was "The welfare of the child." At the outset Dr. Macalister pointed out that, from a national point of view, it was a most important problem, and one which would require, not only the energies of the medical profession but of all those kindred associations of philanthropic endeavour for many years to come, owing to the losses entailed by the war. He passed in survey all that had been done in pre-war days by various agencies, which Liverpool was one of the first communities to call into existence. But much more, especially in the way of prevention and of raising the standard of health, was necessary —nay, imperative. He laid great stress on the improvement of the hygienic conditions under which the apparently healthy offspring of the masses were brought up, and pointed out that the physical condition of many children, not necessarily requiring medical treatment *in sensu stricto*, could be and ought to be ameliorated by paying greater attention to the surroundings in which they live, move, and have their being. Dr. Macalister considered that the campaign against venereal diseases would fructify and materially influence the mortality of children, not to mention the number of children that never become viable. He adumbrated a scheme with a central bureau having for its object child welfare. Children would be brought to this centre, the various defects and ailments carefully sifted, and the parents advised upon the course they should pursue. He foresaw that increased hospital accommodation would be necessary, and also various rest homes, preferably in the country. He cited the excellent results that had been achieved in the Country Hospital for Children at Heswall, and the Leasowe Hospital for Crippled Children. Institutions were needed where the health of children who had suffered by town life and unhygienic environment could be restored, and by better surroundings be maintained when they returned to urban life. The address was punctuated by applause, and the hearty vote of thanks proposed by Dr. T. R. Glynn and seconded by Dr. E. W. Hope, and acclaimed by his audience, showed how much it had been appreciated. Afterwards Dr. Macalister entertained the members at a conversazione with refreshments.

WELSH HOSPITAL FOR MAIMED SOLDIERS.

Lord Tredegar has expressed his intention of presenting to the committee of the hospital for maimed soldiers at Cardiff the freehold of the houses the leases of which were recently purchased. He has also given £1,000 to the comforts fund. At a conference with the Cardiff technical instruction committee last week Lieutenant-Colonel Lynn Thomas expressed the hope that the committee would co-operate in the work of training wounded men. Excellent work of that nature was being done at Rouen, and there would be room on the site for the erection of the necessary workshops. The chairman said that Principal Coles was investigating the matter, and Dr. G. N. W. Thomas and Mr. F. W. Blower said that the existence of such a hospital would be of great advantage in the future to South Wales colliers who were unfortunate enough to lose a limb. A letter has been received from Major-General Sir Francis Lloyd, chairman of the Queen Mary's Convalescent Auxiliary Hospital at Roehampton, expressing the pleasure with which his committee had learnt of the progress of the plan to establish a hospital in Cardiff for limbless sailors and soldiers in connexion with the Queen Mary's Hospital at Roehampton.

Scotland.

AT a meeting of the Edinburgh Botanical Society on October 12th it was resolved to print the list of members and to expunge from it the names of all alien enemies.

The new educational block added to the Edinburgh Royal Institution for the Education of Deaf and Dumb Children was opened by the principal of the university on October 13th. To it all educational work has been transferred. This has rendered it possible to add to the dormitories and to provide a commodious dining hall and cookery demonstration room. By the use of folding glass panels six of the twelve rooms in the new building can be transformed into what are practically open air classrooms, a plan upon which Sir J. A. Ewing congratulated the directors.

WOMEN MEDICAL STUDENTS AND EDINBURGH UNIVERSITY.

On October 10th the great change, it might almost be called revolution, in the teaching of the women medical students in Edinburgh took place quietly and apparently without a hitch. The arrangements were in the main carried out along the lines indicated in the JOURNAL (July 8th, p. 58, August 5th, p. 196, and September 9th, p. 370), and considering the shortness of the time and the difficulty of obtaining labour the university authorities are to be congratulated on the success which has attended their efforts to provide suitable accommodation within the walls. A sitting-room has been found, and an office for the women students, where Mrs. Garden Blaikie, M.B., Ch.B., acts as assistant to the Dean of the Medical Faculty. In most of the systematic classes the women students are taught alongside of the men, but in all the practical classes the tuition is given separately. The clinical classes are, for this session, being carried on as before. In two of the systematic classes, however, materia medica and midwifery and gynaecology, the women are being lectured to apart from the men students. The teaching in materia medica is being given by Dr. John Orr, M.D., F.R.C.P.E., who has been teaching for some years in the extramural school; for the present session he is acting as lecturer in the department of materia medica to women students in the university. Dr. J. W. Ballantyne, who has lectured each session for many years to the women students in a separate class outside the university, has been appointed for the present winter to act as lecturer in the department of midwifery to women students within the walls. Dr. Freeland Barbour, the university lecturer on gynaecology, will duplicate his course of lectures on that subject, teaching the men students in the morning and the women in the afternoon. By these arrangements the dislocation of class hours has been reduced to a minimum, and the smooth working of the new system has been almost if not entirely secured.

It is impossible as yet to give completed figures of the women students who have thus been added to the university roll. The number attending the Edinburgh School of Medicine for Women in the past summer session was roughly 170. This number was, of course, reduced by the number of women who took degrees or diplomas in July. Further, it included a few women who were studying not for the university degree, but for the triple qualification of the Royal Colleges, and it is understood that some, or perhaps all, of them, are continuing their work in the extramural school. The number 170 is therefore subject to these two deductions. On the other hand, at least 57 new students have joined the classes this winter, making, with the new comers of last summer (23), a total of 80 women for the first year. The total number at present studying in the university medical classes is 201, and to this total a few additions may be made when the enrolment is complete. It would seem, therefore, that the change into the university has certainly not checked the numbers coming forward, although it cannot be affirmed that an equally large number would not have joined if the teaching had been continued outside the walls. If the teaching had been continued in the extramural school, it is quite certain that additions would have had to be made to some of the premises in which it was being carried on.

Whilst, therefore, the university is to be congratulated on the accession to its strength in students and to the

facility with which a large change has been carried through, it must also, in fairness, be pointed out that the Extramural School has suffered to the extent of the deductions which have in the meantime been made from the numbers of students attending its classes. Possibly, as time passes, a readjustment will tend to take place, and the women students, like the men, may find it useful or advantageous to take some of their classes outside the university. It may be well for both the university and the Extramural School if this happens, for one of the strongest features in the Edinburgh teaching has always been the choice of lecturers which the existence of the two (and sometimes more) institutions permitted and provided. For the present session, at least, the extramural classes will probably be seriously depleted. The extramural lecturers who gave the teaching in the Edinburgh School of Medicine for Women have suffered in connexion with their commitments for the winter, including the rents for their classrooms, the salaries for their assistants, etc. It is understood that the University Court in view of the change in its procedure respecting the teaching of the women medical students, with the consequent disturbance of the lecturers who formerly carried on the teaching, have set aside a sum of money which may to some extent recoup them for the financial losses they may have sustained and help to meet any commitments which they may have for the present session. It was doubtless the university's action which led the lecturers of the women's school to withdraw their application (in July) for a continuance of university recognition as such.

Miners and Doctors' Fees.

A report of the results of a conference of the Colliery and Public Works Surgeons' Committee for Scotland and the executive of the National Union of Scottish Mine Workers, held in Edinburgh on August 25th, was published in the JOURNAL of September 2nd. At a meeting held in Glasgow on October 10th between the Surgeons' Committee and the executive of the Scottish Colliery Engine and Boilermen's Association, the following agreement was arrived at:

That it is agreed between these bodies that the rate for medical attendance upon the dependants of the members of the Scottish Engine and Boilermen's Association should be at the rate of 3d. per week, inclusive of medicine, and 2½d. per week per worker, exclusive of medicine. That the medicine be supplied in accordance with the custom prevailing in the counties of Lanark, Renfrew, Dumbarton, Stirling, West and East Lothian, where the rate shall be 3d.; and that in the counties of Fife, Clackmannan, Kinross, and Mid-Lothian, where it is not the custom to supply medicine, the rate shall be 2½d. It was further agreed that the arrangement be terminable on a month's written notice on either side, that the agreement be intimated to the collieries, and should if and when possible be made to extend to Ayrshire. It was also agreed that if mechanics employed at collieries wish to have the benefit of the arrangement they should be included. The method of collecting the deductions will, as formerly, be through the colliery offices.

Ireland.

THE Gorey Guardians have rescinded, by eight votes to seven, their previous order authorizing prosecutions against twenty defaulters in each dispensary district, notwithstanding the Local Government Board's letter warning them that any members voting against vaccination would be made special defendants in a High Court proceeding.

The Sanitary Committee has recommended the Kingstown Urban Council to adopt a scheme for maternity and child welfare. It is proposed to appoint a nurse at a commencing salary of £65 a year, increasing by annual increments of £2 until a maximum of £105 is reached. They also advise the appointment of a medical officer at a salary of £25 a year, increasing by annual increments of £1 until the maximum of £45 is reached. The Local Government Board will contribute half the magnificent salaries.

At the last meeting of the Public Health Committee of the Dublin Corporation Sir Charles Cameron reported that during August and September a number of cases of typhoid fever had been notified, and it had been ascertained that some of the patients had partaken of cockles and shellfish. Posters had been displayed in the streets warning people not to eat cockles uncooked.

Another hospital ship reached Dublin on October 7th from Havre, carrying 397 wounded soldiers; 137 were admitted to Dublin hospitals, and special hospital trains took 120 to the Curragh, and 140 to Belfast.

Royal Academy of Medicine in Ireland.

At the annual meeting of the Royal Academy of Medicine in Ireland the following were elected to fill the various offices for the ensuing year:

President, R. D. Purefoy; General Secretary, J. Alfred Scott; Secretary for Foreign Correspondence, Sir John Moore.

Medical Section: President, H. C. Drury. Surgical Section: President, W. Taylor, F.R.C.S. Obstetrical Section: President, Gibbon FitzGibbon. Pathological Section: President, E. J. McWeeney. Section of Anatomy and Physiology: President, D. T. Barry. Section of State Medicine: President, W. A. Winter.

Acute Anterior Poliomyelitis.

At the last meeting of the Castlerea Board of Guardians Dr. P. Donnellan, M.O.H. Ballinlough Dispensary District, reported that he had at present under treatment eight or ten cases of poliomyelitis, and that there had been one death. An order was made on Dr. Donnellan's application, calling on the people of the district to have their houses lime-washed. Owing to the occurrence of cases of the disease in the Glenamaddy District, the Rural Council intends to enforce compulsory notification.

Ballinasloe Asylum.

The Committee of Management of Ballinasloe Asylum has voted an annuity of £104 a year to the widow of the late Dr. Kirwan, medical superintendent, and has appointed Dr. John Mills, who had been for twenty-three years assistant medical officer, to the vacant post. On emerging from the board room he was seized by the patients, who carried him shoulder high through the corridors amid great cheering. Dr. Mills was Honorary Secretary to the Irish Committee of the British Medical Association for some years before the Irish Office was opened; he also acted as secretary of the co. Galway Local Medical Committee until the outbreak of the war, when he joined the Royal Army Medical Corps. The unanimous election of Dr. Mills has caused much satisfaction to his Irish colleagues, with whom he is very popular, and at whose disposal he has always placed his very able services in their struggles for fair treatment. Dr. Ada English, second assistant, was elected assistant medical officer at a salary of £260 per annum with allowances.

Correspondence.

THE SOLDIER'S HEART.

SIR,—With reference to recent correspondence in the BRITISH MEDICAL JOURNAL on "the soldier's heart" or "disordered action of the heart," a perusal of the following figures taken from the Annual Report of the Sanitary Commissioner with the Government of India for 1913 may be of interest:

	Strength for 1913 in India.	Admissions to Hospital, Disordered Action of Heart.
British army	70,755	226
Indian army	131,512	38
Civil prisoners	108,286	21

I am unable to quote figures for other years as more reports are not easily available to me, but these figures are sufficient to show that the disability is much less common amongst the natives of India than amongst Europeans living under better sanitary conditions in the same climate and doing the same amount of physical work. As goitre and diseases of the thyroid are very common in the Indian hills, I think it very probable, if hyperthyroidism was a cause of this disorder, that the population of the Indian and frontier hills would soon cease to exist, as the conditions of life are so hard in the hills that no man could suffer from "soldier's heart" and live. The Government of India think so little of goitre that recently an order was published directing that public

follower recruits were not to be rejected for small goitres alone. I have sent several men with small goitres to Mesopotamia; so far, none have been invalided with disordered action of the heart. The mouths of the majority of Indians are septic; by septic I mean that, with little trouble, pus can be expressed from between the gums and teeth of the lower jaw without taking into consideration any other part of the mouth. My experience is that if men suffering from goitre and septic mouth are placed under good sanitary conditions and given good food and plenty of work, their disabilities will clear up in a very short time. One cannot help thinking that the answer to the question, What is the cause of soldier's heart? is to be found in the diet. In India there are roughly two populations, Indian and European; the European eats from two to five meals each day, whether hungry or not; the two meal people eat meat at each meal, the other people eat meat or animal food at least thrice, often five times, a day; the Indian eats once or twice, or when appetite demands, daily. Their staple diet is whole grain stone-milled flour with a little curry, etc., for flavour. Practically one can say that the whole of native India is vegetarian. It is true that some castes eat meat, but they rarely do so more than once or twice a week.

There are two points I would emphasize: (1) The Indian eats when his appetite demands; (2) Indian food is absolutely natural—that is, no edible part of the grain, fruit, vegetable, or sugar is removed when prepared for food.—I am, etc.,

F. W. COTTON,
Major R.A.M.C.

Lahore Cantonment, Sept. 12th.

THE REPORT OF THE ROYAL COMMISSION ON VENEREAL DISEASES.

Instruction of the Young.

SIR,—I was intentionally "unconvincing" on percentages for this reason: I believe that educated public opinion revolutionizes tone. I judge by various tests, among which are complexion, physique, and bearing; what is said to me by boys, old boys, and parents; and many instances in which boys, sometimes quite young, sometimes themselves with "pasts," have taken on their own initiative strong action against imported infection. Hence my plea for the extension of educated public opinion, and for the wider co-operation of the medical profession. But in a matter like this I know that belief is not knowledge, and I do not venture to dogmatize.

It would not be possible here to answer in detail the inquiry of "Daddy M.R.C.S."; I would do so privately if he cared to write to me through your office.

I think there is a risk in giving instruction in sex physiology to very young boys; I have known cases where a mother's well meant efforts led to disaster. I think that 15 or 16 is generally young enough for that, unless through the keeping of animals or otherwise a boy's curiosity is stimulated and he wants to know; few things are more dangerous than unsatisfied curiosity. Earlier I endeavour to impress on him that the subject is very important, that he has the right to understand it when he likes, that the boy who will talk about it is a person to avoid, and that present safety for him lies in "don't talk and don't touch."

Incidentally, especially if a boy has reached 13 or 14 without instruction, it will often come out in conversation that he has gone wrong; these cases are included in the 24 per cent. I believe, though again I cannot be sure, that to know, as he often does not, the harm involved helps him to recover. I do not think there is much, if any, risk involved in talking on these lines; I am certain, and do not hesitate to say so, that if there is any it is infinitesimal compared to the danger of the ostrich policy.—I am, etc.,

A PUBLIC SCHOOL MASTER.

October 1st.

MEDICAL TRADE UNIONS.

SIR,—In the year 1913 the National Medical Guild sought and obtained registration under the Trade Union Acts. In the year 1914 the Panel Medico-Political Union did likewise. Both of these had been anticipated by the Leicester Union of Medical Practitioners.

In the year 1916 two bodies of medical men, one in Yorkshire and the other in Kent, similarly sought registration. To their intense surprise these were informed that registration must be delayed pending the approval of the General Medical Council, who considered that trade union organization as applied to medical men was "derogatory."

Does the Council realize that trade union organization is the only form of organization recognized by the State for bodies of men combined to protect their interests against exploitation? Does the Council realize that funds used for such purposes can be protected in no other way? And, finally, what, if any, right has the Council to influence the Registrar of Friendly Societies in the carrying out of his duties, and why is this right suddenly assumed when we are threatened with changes in our terms of service which, as usual, are to increase our work while our remuneration still grows more and more uncertain?—I am, etc.,

GORDON WARD.

Sevenoaks, Sept. 29th.

THE POSITION OF THE BRITISH MEDICAL PROFESSION AFTER THE WAR.

SIR,—The main point at issue in this correspondence appears to be the Insurance Act, as to how it will be worked after the war.

It is to be expected that the country will be flooded with members of the profession seeking employment, and this opportunity will be grasped by those who are in power to bring about a whole-time service in some form or other. The Insurance Act brings to me only a small fraction of my professional income; it therefore does not much concern me what happens as far as personal gain is concerned; but this is a side issue.

The present is the time, then, for action to secure entire unity. How is this to be brought about? The British Medical Association, unfortunately, represents only a portion of the profession, and many practitioners shrink from membership in order to avoid being tied down.

Until there is complete unity the British Medical Association cannot assist the profession as a whole in the manner it would wish to do. The General Medical Council is the supreme body, possessing great powers, and governs every registered medical practitioner, and to its decision every one is obliged to bow. Registration is compulsory by the General Medical Council, and membership of the British Medical Association should be the same and subject to its influence. Then, and then only, will the much desired state of complete unity be obtained.

I can see no reason why this should not be brought about through the medium of the General Medical Council in the following way. The Council, being a statutory body restricted by the provisions of Acts of Parliament, is at the present moment unable to do as suggested, but all local representatives of the British Medical Association can through their Divisions petition the members of Parliament for their respective districts to endeavour to obtain an additional Act to grant this power to the General Medical Council.—I am, etc.,

ARTHUR M. BARFORD.

Chichester, Oct. 11th.

SIR,—Your leader on Article 3 of the new agreement sounds a much-needed warning. Here, as you ably point out, is the thin edge of the wedge, and if anything can be done to protect the profession it is now or never. Once the precedent has been established of adding special duties without extra fees we will never be able to undo it.

In so short a time it seems hopeless, in the present state of our organization, that any large amendment could be made in the new agreement; but surely a short clause providing that extra fees should be paid for all special services would be universally accepted, and, especially if backed by the British Medical Association, would be unanimously adopted by the profession as a condition of signing the new agreement. The addition to Article 3 of such a clause as the following might serve to prevent the exploitation of our profession:

> Provided always that where special services are thus required, such as attendance at a consultation, making special reports, or carrying out any special treatment suggested, extra fees shall be paid for such services on a prearranged scale. The amount of such fees shall in no case be deducted from the Practitioners' Fund.

—I am, etc.,

MEMBER.

October 9th.

SIR,—Dr. Denis A. Sheahan has either misread or misunderstood my letter of September 30th, for I in no way advocated incohesion in the profession, but wished to

emphasize the necessity for local control. Conditions of medical practice vary so much that terms which may be acceptable, say, in Walsall, may be anathema in Portsmouth, and for both places to be bound by a majority rule framed in London must be against the interests of one or the other body of medical men. Freedom without order may mean anarchy, though what this has to do with my letter I do not see. How Dr. Sheahan imagines that "professional interests" does not include a strong cohesion amongst us I know not; and, by the way, he omits these vital words when quoting me the second time. Disunion is as fatal to us as it is undesirable in quotation or in anything else benefited by cohesion. What I did say was, "Strong local bodies owning loyalty to none but themselves and their professional interests." This may sound selfish, but is no more so than trade-unionism or the struggle for existence. I would see our central body—the Association, I hope—the mouth rather than the brain of the medical profession corporate; but what is to be desired more than anything at present is that the profession should descend from that pedestal of altruism on which it has rested for so long, and become a live business organization.—I am, etc.,

October 16th. ORGANIZER.

Obituary.

JOHN ROGERSON HAMILTON, M.D.Edin.,

HAWICK.

DEATH has laid a heavy hand upon the medical profession in the present year, not only among those engaged on active service but also among those seniors at home who at the present time have been called upon to undertake additional duties and responsibilities owing to so many of the younger generation having responded to their country's call. As briefly intimated in the JOURNAL last week, we have now to mourn the death of Dr. J. R. Hamilton, a well-known practitioner in the south-east of Scotland. On October 7th he seemed in fair health and was out and about much as usual, but in the evening he was suddenly seized by a severe attack of angina, which terminated fatally before midnight. Thus ended a useful and active life, without the added distress of a prolonged and painful illness. Some of his friends knew that he had an aortic lesion, and early in the year he had a severe attack of influenza, with chest complications, but in May he was able to go to North Berwick to recruit. Shortly after this he returned to his home, and, though not looking well, he seemed able to resume all the threads of his accustomed active life with his usual energy. He died, however, as he probably would have wished, in full harness.

Dr. Hamilton graduated M.D. at Edinburgh University in 1878, and in the following year became a licentiate of the Royal College of Surgeons of Edinburgh. As a practitioner he was much sought after in Hawick, and in a wide country area beyond it. He held many appointments, parochial and other, in the district, and acted as medical referee for the railway company over a section of the line which entailed for him much travelling. He was greatly respected by his patients and fellow citizens, and was held in high repute by his fellow practitioners, few of whom but have benefited by his sound advice or kindly assistance at one time or another. He took a deep interest in the local cottage hospital, the Jubilee Nursing Association, and in many kindred institutions, and for several years was a much appreciated member of the Hawick Town Council.

Apart from his immediate professional duties, he devoted most of his time to active work for the British Medical Association. He had been a member of many committees, and had filled many of its offices, including the presidency of the Border Counties Branch, and, later on, also of the Edinburgh Branch. He was constantly in Edinburgh, in Perth, in London, or elsewhere on Association business, and it can only have been by working early and late that he was able to overtake the calls of a large practice. In 1910 he succeeded Dr. McKenzie Johnston as representative of the Edinburgh Branch on the Central Council in London, and he only completed his term of office in July of the present year. This entailed a great strain upon him, for in addition to the Council meetings there were many committees to attend all of which involved a long journey to London, and frequent absences from home.

For several years Hamilton acted as Chairman of the Scottish Committee, British Medical Association, and it was during the time he served thus that increased duties and activities devolved upon the Committee. He was secretary of the Section of Obstetrics and Gynaecology at the annual meeting of the Association in Carlisle in 1896.

During his term on the Central Council many important matters came up for consideration, and not the least of these were the organization of the profession and the knotty problem of the Insurance Act. While at first Hamilton was opposed to the medical details of the Bill, and was one of the Scottish Medical Council formed to combat these, he early came to the conclusion that the forces against us were too strong to contest, and he accepted what seemed to him to be the inevitable.

It is only right we should recognize that we owe to Hamilton the inception of the Scottish Emergency War Committee, and that its formation resulted from his action. At the commencement of the war he invited the Scottish members of the General Medical Council, and prominent members of other bodies, to meet him along with the Scottish Committee of the British Medical Association, with a view to promoting a committee to safeguard the interests of Territorial officers suddenly called up, and, where necessary, to provide locumtenents to conduct their practices for them. This was carried into effect, and it was only considerably later on that the functions of the committee developed, and it took on the much wider scope and activities which it now has. It is understood that his active mind had recently been engaged on a plan to provide legal assistance to look after the interests of the families of medical men killed in action.

Dr. Hamilton was a man of high ideals. In the widest sense of the term he was a straight and honest man. He was kind-hearted, genial, and helpful to every one, but specially to those of his own profession. If all his ideas did not materialize as he would have wished, yet it can be said that no man gave more willingly of his time, his strength and his energy for the benefit of his profession and of his professional brethren. His ambition was to improve the status of his profession and there is little doubt that his days were shortened by the work he undertook with this object in view.

With honour and respect, in the presence of many friends and relatives, Hamilton was laid to rest on October 10th in the Wellogate Cemetery, Hawick, at the age of 63. He worked hard, but his day's work was done!

Sympathy goes out freely to the widow and to his son, Captain J. O. Hamilton, R.A.M.C., at present on service in France. His elder son, Captain Hamilton, K.O.S.B., died gallantly last year in the trenches of Gallipoli.

OLIVE CLAYDON, M.D.Lond.,

OLDHAM.

WE regret to have to record the death, on October 5th, of Dr. Olive Claydon, at the age of 40, at the residence of her father in Oldham. She was educated at the Girls' High School, Manchester, and the London School of Medicine for Women. She graduated M.B.Lond. with honours in obstetric medicine in 1901, B.S. in 1902, and M.D. in 1905. After holding appointments as resident medical officer of the maternity department of the New Hospital for Women, house-surgeon to the Chorlton-on-Medlock Dispensary, Manchester, and resident medical officer of the Edinburgh Hospital for Women and Children, she engaged in practice in Oldham, and took a large part in public work. We are indebted to Dr. F. L. Pochin, the Representative of the Oldham Division of the British Medical Association, for the following tribute to her memory:

It is impossible to touch upon all the various activities of a personality so many-sided as that of the late Dr. Olive Claydon in a short notice. But it may be possible to give some slight idea of a few of the directions in which she so generously spent her energies. When a medical student she first discovered that she was suffering from mitral stenosis, but she chose a strenuous career of

service for others rather than the sheltered life of ease which was quite within her reach. She therefore built up a very exacting and scattered practice among the women and children in her native town, and identified herself with every movement for the public welfare, and especially for that of women and children. The extent of her many charities was known only to herself, and it would certainly be her wish that no further reference should be made to them here.

Possibly one of her chief outstanding characteristics was her great love of fair play, and it was one which led up to her fearless championship of the cause of women and to the part she played in medical politics. Believing, as she did, that women could do much to ameliorate social conditions if they had the parliamentary suffrage, and that it was only fair that they should have it, she spared no effort to do her full share of work in this direction, and on one occasion she met a prominent opponent of women's suffrage in public debate in one of the largest halls in Oldham, and before a crowded audience ably countered all his arguments. At the same time she was neither militant nor smoke-dried suffragette, but was possessed of her full share of feminine gentleness and charm. It was the same sense of fair play which led her into medical politics. She saw that her profession was being forced into a bargain which it was very reluctant to accept, and she entered into the fray with characteristic enthusiasm. She represented the Society of Medical Women on the Insurance Acts Committee of the British Medical Association, and was secretary to the Oldham Panel Committee to the day of her death. She was also a member of the Oldham Insurance Committee, Medical Benefits Subcommittee, Medical Service Subcommittee, and of the Lancashire Insurance Committee. Her sound judgement, sanity, and keen interest in all the various questions under discussion will be very greatly missed by all these bodies, and especially by the Panel Committee. Indeed, her keenness was sometimes amusing. When we were about to bring some important matter before the Insurance Committee she would often beg to be allowed to "have first go," and we knew we could not do better than consent. When she was asked to give evidence before the Commission on Excessive Sickness Claims she was quite indefatigable in collecting facts on which to base her argument, and for some time before she went to London sat up until three or four in the morning sifting and classifying these facts. Her examination lasted for the greater part of two days, and she answered about 1,500 questions. She went through this ordeal with flying colours, for she had a keen sense of humour and a pretty wit, though none of her retorts ever left any sting behind them.

To her colleagues her love of the exact and literal truth was well known, and we thought she sometimes carried it to an extreme, if such a thing be possible. She was absolutely loyal to those associated with her, and whenever she was sent to represent her profession was always very eager to know when she returned whether we were quite satisfied that she had expressed our opinions rather than any she might have formed herself.

The great work of her life, however, was undertaken near its close. She felt that many sufferers from venereal disease were innocent victims, and that, in any case, it was in the interests of society that those who suffered should not be deterred from placing themselves under medical supervision through fear of losing sick benefit. She therefore did everything she could to convert the approved societies and others to this view, and it is to be feared that her exertions in this direction shortened her life. Though her last illness commenced as far back as early in last March, she very often spent twelve hours a day for days at a time in writing to urge her views on those concerned, and it was a very great joy to her to feel that her object was practically accomplished before she died. A prominent public official and personal friend of hers, in sending her some lines of George Eliot's, said: "A great source of happiness and peace to you just now should be the feeling that you have fulfilled the lines, you have most assuredly stirred the pulse of many to greater generosity, and with persistence urged our search to vaster issues. You do not know how much you have been doing this, but you have been doing it. I shall never forget and shall never forego the new light, the new uplift, the new idealism, that you showed to me."

Those only are dead whose work and words are dead, and in this sense Olive Claydon is assured of immortality.

The memorial service, held in Oldham on October 9th, was attended by a large number of members of the medical profession and by representatives of the Oldham Insurance Committee and Charity Organization Society. Her body had been cremated at the Manchester Crematorium on October 7th.

CHAUNCY PUZEY, F.R.C.S.,

CONSULTING SURGEON, NORTHERN HOSPITAL, LIVERPOOL.

IT is with regret we have to record the death of Mr. Chauncy Puzey, which took place somewhat suddenly on October 10th at West Kirby, where he had been residing during the few months since his retirement from practice.

As surgeon to the Liverpool Northern Hospital from 1875 down to his retirement from the staff a few years ago, he attained considerable eminence in surgery. He was born in London. His father was head cashier of the Bank of England, and the name Puzey appeared on the banknotes of that period. He received his general education at the Merchant Taylors School in London, and studied medicine at Guy's Hospital. He took the diploma of M.R.C.S. in 1863, and those of L.R.C.P.Lond. and L.S.A. in the following year. Thirty years later, for his acknowledged reputation as a surgeon, and while he filled the office of president of the Liverpool Medical Institution, he was elected a Fellow of the Royal College of Surgeons of England, an honour which all his surgical friends regarded as most worthily bestowed. In 1865 he was appointed house-surgeon to the Liverpool Royal Infirmary, and during his occupancy of that office was in a position to watch the development of and to carry into practice the Listerian method. Mr. Puzey in the two addresses he delivered as president of the Liverpool Medical Institution gave his hearers an admirable and lucid survey of the earlier period of the Listerian method. He foretold in 1894 that the aseptic animal ligature would hold its ground the longest of the various improvements in the details of surgical practice immemorably associated with Lister. At the time of Mr. Puzey's house-surgeoncy secondary haemorrhage was the dread of surgeons, and he was able to see this dread abolished by the introduction of the "animal ligature." These addresses of Mr. Chauncy Puzey revealed not only his judgement as a sound surgeon but also displayed his ability to record impartially the struggles through which the new method advocated by Lister had to go before acceptance by surgeons. As a Guy's man he had been taught to rely upon torsion as the most effective measure for arresting haemorrhage, and realized in his own practice the superiority of the "antiseptic animal ligature" introduced by Lister in 1869.

Mr. Puzey made several contributions to the medical journals, and especially to the *Liverpool Medico-Chirurgical Journal*, dealing with various surgical diseases. These were all of a practical nature and typical of the author's trend of mind. He was not, nor would he have laid claim to be so regarded, a brilliant surgeon. Mr. Puzey's surgical opinion was sound, well weighed, and only determined after mature consideration. For many years he held the post of medical referee to the London and North-Western Railway, and not infrequently appeared as medical witness in cases of railway injury. It was in such circumstances that Mr. Chauncy Puzey showed his surgical judgement and testified with singular clarity of vision and precision of statement.

As a man he was of a retiring disposition and made no use of the little graces that assist men in practice. He was a staunch colleague, considerate, and deeply interested in the hospital where his life's work was done. On retiring from the active staff he was made honorary consulting surgeon and a member of the committee of the hospital. This latter appointment was evidence of the high estimate placed upon his judgement by the hospital authorities and of their anxiety to retain his services.

The funeral at West Kirby parish church was attended by many of his colleagues and friends and representatives of public institutions. His old schoolfellow and lifelong friend, the Rev. J. Bell-Cox, of Liverpool, took part in the service. Mr. Chauncy Puzey never married, but he leaves behind many sorrowing friends and a fragrant memory of a man who nobly and unostentatiously did his work, and in this it can truly be said he had his reward.

THE LATE MAJOR A. A. MARTIN, N.Z.M.C.

Surgeon-General R. Porter, C.B., whose letter is dated "In the Field, 10th October, 1916," writes:

I hope you will be able to grant me a small space to pay a slight tribute to the memory of the late Major A. A. Martin, N.Z.M.C., of whose death from wounds in action I have learnt with the deepest regret.

I first met Major Martin in September, 1914, during the battle of the Marne. He had been sent up to the corps with which I was then serving, and I posted him to the 15th Field Ambulance. It was not long before he proved his worth. Those who had the opportunity of seeing the work done by Martin in the shrapnel-swept village of Missy on the Aisne, and later in an hôpital civil et militaire behind the lines will never forget the fine qualities he displayed; whether removing wounded from under heavy shell fire to a place of safety, or performing some of the most difficult operations known to surgery under the most trying conditions, his fearless courage and fine judgement were abundantly proved.

Personally I shall never forget his surgical work in the hospital in question. The operation work which he did amongst the apparently helpless cases was magnificent, and stamped him as a skilful operator of the highest order.

Arthur Martin was one of the most sympathetic and tender hearted of men I have ever met, and still he did not know what fear was in the midst of danger. During the time he was with us a sentence in his very readable book, *A Surgeon in Khaki*, sums up his life: "The surgeon sees the seamy side of war. He comes close to the men struck down in the field—helpless, and bleeding, and in pain. He stands by them in the dark hours in hospital, and by their bedsteads when they die."

Many who worked with us in these days have "crossed the bar": none of them will be remembered more affectionately for qualities of heart and head than poor Arthur Martin.

The late Dr. Arthur Nimmo Walker.—Mr. Thomas H. Bickerton (Liverpool) writes: Sir James Barr, in his admirable appreciation of the work of the late Lieutenant-Colonel Arthur Nimmo Walker (p. 503), has instanced its progressive character. Another instance worthy of special notice was the action he took in connexion with the hospital—St. Paul's Eye and Ear Hospital—founded by his father, the late Mr. George Walker. By choosing to confine the work at St. Paul's to the exclusive treatment of the eye, Mr. Nimmo Walker brought Liverpool into line with London, Manchester, Birmingham, Bristol, Edinburgh, and Glasgow. Medical students desirous of specializing in ophthalmology can now study the subject in an eye hospital devoted to eye work in Liverpool.

Medico-Legal.

PROPERTY IN PRESCRIPTIONS.

We learn from the *Western Morning News* that at the Honiton County Court on October 9th, before his Honour Judge Lindley, Henry Le Brasseur, of Woolmer, Stow Park, Newport, sued Hinton Lake and Sons, Limited, Fore Street, Sidmouth, for failing to return a prescription by Dr. Grant Wilson, of Sidmouth, given on August 16th, 1916, or to pay for the prescription, valued at 15s. Plaintiff said his wife received a prescription from Dr. Grant Wilson, which they took to the defendant to be made up. The prescription was not returned, and the assistant said that in the case of Dr. Grant Wilson's prescriptions they had orders to keep them, unless told otherwise by the doctor. Eventually the doctor sent a copy of the prescription with his receipt. Mr. McGahey said that on August 22nd, when Mr. Le Brasseur asked for the prescription, he was informed that they would give it up if Dr. Grant Wilson would agree. The doctor, however, declined. The prescription was of no value whatever to Messrs. Hinton Lake, and they were fighting the action on a question of principle, in order to keep faith with the medical profession and Dr. Grant Wilson. Dr. Grant Wilson said he had instructed the chemists when a patient asked for a prescription to let him know, and he then gave one. He did this to protect the public, because in many cases prescriptions intended for adults were given to infants. Whenever he gave a prescription which chemists could return to the patient he also wrote on it "return to patient." His Honour held that there was no property in the document given by Dr. Grant Wilson, as it was only given to Mrs. Le Brasseur to take to the chemists to save himself the trouble. Mr. Le Brasseur therefore had no claim to the document, and the action failed, with costs.

Universities and Colleges.

UNIVERSITY OF EDINBURGH.

Autumn Graduation Ceremony.

At the autumn graduation ceremony on October 13th there was a comparatively small list of graduates; two-thirds of those in arts were women. The Vice-Chancellor said that all the male graduates in medicine were proceeding to accept service in the navy or army. It behoved all those who remained, whether as students or as staff, to have a sense of quickened responsibility for keeping alive the enfeebled and attenuated life of university education.

Degree in Education.

The ordinance establishing a new degree—that of Bachelor of Education—has been sanctioned. The degree is to be regarded as an honours one, and candidates must be graduates in arts or science of a Scottish or approved university. The course will extend over two academic years and the examination will be divided into two parts. The arrangements for the degree will not come into operation until next year.

Conferment of Degrees.

The following degrees were conferred:

M.B., B.Ch.—J. J. ckermann, A. G. Anderson, Ahmed Aziz, A. H. de Wet Budler, E Chapellie, J. S. Galvin, *G W. Grant, Balkrishna Rupkrishna Handoo, T. L. P. Herries, F. J. C. Johnstone, A. C. Kirton, J. L. Launond, C. M'Donald, Margaret M'N. M'Garrity, F. H. van der Merwe, Isabella Morison, G. A. Paris, *J E. Phillips, J. Ratcliffe, Gokal Chand Sahgal, Satyendra Nath Seal, J. Sellar, B. H. Simon.

* With second class honours.

UNIVERSITY OF ABERDEEN.

The winter session in science and medicine opened on October 12th. Professor Ashley W. Mackintosh in addressing his class in medicine said that of the 101 graduates, students, and alumni of the university who had given up their lives in the war, 24 had been in the faculty of medicine. Those he was addressing, men and women alike, were at home because they were preparing themselves to offer the highest service to their country as fully qualified practitioners of medicine. No nobler call had ever been made on medical students. There was no room for slackers or chronics, and if any one thought that this was the time for "getting through" easily he had better at once change his supposed vocation in life.

Professor Mackintosh paid a warm tribute to Dr. Arthur Hugh Lister, who had died as truly in the roll of honour as if he had been struck down by an enemy's bullet. Lister was a physician of the first rank; he was a teacher of whom any medical school might justly be proud; he took a keen interest in all that concerned the welfare of the community and the State; and he was, as a man, loyal to the core. His colleagues, the students of Aberdeen University, and the whole north-east of Scotland, were the poorer for his loss. He had gone, but his memory and example would and must remain.

UNIVERSITY OF LONDON.

Guy's Hospital Medical School.

The following entrance scholarships have been awarded: Senior Science Scholarships for University Students: £75, William Gover, Balliol College; £35, R. B. P. Lansdown, B.A., Pembroke College, Cambridge. Junior Science Scholarships. £120, A. McKenzie, Preliminary Science Class, Guy's Hospital: Scholarships in Arts: £100, A. Y. Cantin (private study); £50, J. A. Currie, Diocesan College, Rondebosch, Cape Colony.

University College Hospital Medical School.

The two Goldsmid Entrance Exhibitions, offered annually for competition in September, were awarded this year to Mr. G. V. W. Anderson of University College, London, and Mr. A. W. Holgate of Alleyn's School and University College, London.

NATIONAL UNIVERSITY OF IRELAND.

The *Calendar* for the year 1916 contains all the academical information about the three constituent colleges of the university—namely, those at Dublin, Cork, and Galway, and the recognized college of the university at Maynooth—that such publications commonly comprise.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

A quarterly Council was held on October 12th, when Sir Watson Cheyne, President, was in the chair.

Donation to the Museum.

The thanks of the Council were given to Sir John Bland-Sutton for a presentation of four skeletons of the gorilla, the skeleton of a chimpanzee, and some skulls.

Earlier Closing of the Library.

From October 16th until the end of the month the library will be closed at 5.30 p.m., and after November 1st at 5 p.m.

Annual Report of the Council.

The Council approved the annual report of the committee appointed to draw it up. The report will be presented to the

Fellows and Members at the annual meeting on Thursday, November 16th, at 3 p.m.

The report contains a list of Fellows, Members, and Licentiates in Dental Surgery who have been killed in action, or have lost their lives from wounds or disease contracted whilst on active service with H.M. Forces; they comprise 10 Fellows, 98 Members, and 3 Licentiates in Dental Surgery, and are divided among the services as follows: Royal Navy, 17; Army Medical Service, 3; Royal Army Medical Corps, 75; Indian Medical Service, 5; Overseas Contingents, 5; combatants, 6.

Jenks Scholarship.

Mr. John Sinclair Shadwell, formerly a student at Epsom College, and now at Guy's Hospital, was nominated Jenks Scholar.

Issue of Voting Papers to Fellows Resident Abroad.

A letter, dated September 16th, was read from Lieutenant-Colonel James W. Barrett, R.A.M.C., F.R.C.S., calling the attention of the Council to the disabilities under which Fellows of the College, when resident abroad, labour as regards taking part in the election of members of the Council, and inquiring whether it would be possible to arrange that nominations should be completed three months before the day of the election with a view to making possible the issue of voting papers to Fellows resident in all parts of the empire in sufficient time to permit their return before the day of the election. A committee was appointed to consider these suggestions.

The Services.

EXCHANGES.

CAPTAIN R.A.M.C.(T.C.), in field ambulance temporarily attached to casualty clearing station, would like to exchange with officer at home, stationed in or near London. Please state particulars as to unit, station, and duties, in confidence, to No. 4200, BRITISH MEDICAL JOURNAL Office, 429, Strand, W.C.

Captain R.A.M.C., over eighteen months' foreign service, now in charge of corps troops, desires exchange with M.O. on home station, London or home county hospital preferred. Address No. 4199, BRITISH MEDICAL JOURNAL Office, 429, Strand, W.C.

Medical News.

THE first scientific meeting of the Zoological Society of London for the session will be held at the house of the society, Regent's Park, at 5.30 p.m. on Tuesday next.

FIFTEEN motor ambulances have been presented by a group of Americans to the field hospital service of Russia, and have gone out under the command of Dr. Philip Newton.

A COURSE of four lectures on the influence of solar, α, and radium rays on health will be given by Dr. Harry Campbell, deputy Gresham professor of physic, at Gresham College, Basinghall Street, on Tuesday, Wednesday, Thursday, and Friday next, at 6 p.m. on each day.

AT the meeting of the Section of Epidemiology and State Medicine of the Royal Society of Medicine on Friday next at 8.30 p.m., Captain C. G. Moor, R.A.M.C.. will read a paper on the work of a sanitary section at a base. Officers of the Navy or Army Medical Services and of the Indian and Colonial Services are invited to attend.

AT the end of last week two inquests were held with regard to the deaths of two women who died from poisoning from tri-nitro-toluene. The one was an examiner at a munitions factory and the other was a shell filler. Death appears to have been due in both cases to the effect of the substance on the liver. We hope to publish clinical reports on these cases.

AT the request of the National Council for Combating Venereal Disease, the Lord Mayor of London has called a meeting at the Mansion House on Tuesday next at 3 p.m. to focus attention on the need for providing adequate facilities for the treatment of venereal diseases with the least possible delay throughout Greater London. Among the speakers will be the President of the Local Government Board, the Home Secretary, and the Chairman of the London County Council.

THE Local Government Board has given notice, under the powers conferred upon it by the Parliament and Local Elections Act, which received the Royal assent on August 23rd, that the next statutory elections of county and borough councillors, district councillors, guardians, and parish councillors are to be postponed for a year. In the event of there being a vacancy on the body at the date at which the election would have taken place the vacancy may be filled by co-option.

ON October 18th, at the Philharmonic Hall, a press presentation was given of Mr. Ponting's exceedingly interesting kinematograph lecture, entitled, "With Captain Scott in the Antarctic." Some of the pictures give a most vivid representation of the hardships and difficulties encountered by explorers in the Antarctic regions. Among the figures that frequently appeared was that of Dr. E. A. Wilson, the chief of the scientific staff, who died with Scott on the return journey. The pictures are excellent and often most beautiful, and their effect is reinforced by the realistic account given by Mr. Ponting, who accompanied the expedition as camera artist. In many of his pictures an element of farce is introduced by the attitudes and ways of life of that unconsciously amusing, as well as amazing, bird, the penguin.

Letters, Notes, and Answers.

THE telegraphic addresses of the BRITISH MEDICAL ASSOCIATION and JOURNAL are: (1) EDITOR of the BRITISH MEDICAL JOURNAL, *Aitiology Westrand, London;* telephone, 2631, Gerrard. (2) FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate Westrand, London;* telephone, 2630, Gerrard. (3) MEDICAL SECRETARY, *Mediocera Westrand, London;* telephone, 2634, Gerrard. The address of the Irish office of the British Medical Association is 16, South Frederick Street, Dublin.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

I. asks for suggestions for some treatment (by way of serum-therapy or drugs or otherwise) which would offer some hope of arresting the progress of internal cancerous growths considered inoperable.

THE Director, Medical Research Institute, Lagos, Nigeria, is anxious to obtain No. 24, December 30th, 1910, tome viii, *Bulletin de l'Institut Pasteur*. He will gladly give in exchange any desired number from other journals, whose titles can be had on request, or, if preferred, he will send the money.

ANSWERS.

INTOLERABLE ITCHING.

DR. LEONARD J. KIDD (London, N.W.) writes: Let "Amberley" try every night at bedtime $\frac{1}{10}$ grain of calcium sulphide well triturated with 5 grains of sugar of milk. Oil of cinnamon disguises the taste to some extent. But let him also make certain that tabes is absent, for pruritus, both general or localized in various situations, is not a very rare early symptom of tabes, and tabetic pruritus is seldom thought of, even by those clinicians who know of it existence.

LETTERS, NOTES, ETC.

"A CASE OF INTRAUTERINE SCARLET FEVER."

DR. JOHN CRAWFORD (Dundee) writes: On October 17th, 1915, Mrs. D., aged 30 (about to be confined), presented all the symptoms of a moderately severe attack of scarlet fever. On October 18th, in the evening, she was confined, with the temperature still up, and the rash general and well marked. The child (full-time) was healthy, but, according to the nurse, "seemed unwell" all that night. Desquamation proceeded *pari passu* in mother and child, and both made a good recovery. This was probably a case of extrauterine infection, though the time for incubation must have been unusually brief. But I mention it in view of the statement of Drs. Liddell and Tangye that their experience (and Osler's) is that sucklings are rarely attacked, and that no infant "so admitted locally" to hospital to be suckled by a scarlet-fevered mother has contracted the disease.

DR. F. HONE MOORE (Somersham, St. Ives, Hunts) writes: Some years ago I attended a woman with her first child. A few days after birth the nurse called my attention to a rash on the baby, followed some days after by desquamation. The mother had scarlet fever shortly afterwards and desquamation followed very profusely. My friend, Dr. Mason, of Boston (Lincolnshire), saw the case with me, and we diagnosed scarlatina. Scarlet fever was not in the place or near it, and there were no more cases after these.

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